

EXHIBIT 1

Marom Bikson

April 2024

Shames Professor

Department of Biomedical Engineering

THE CITY COLLEGE OF NEW YORK OF THE CITY UNIVERSITY OF NEW YORK

Center for Discovery and Innovation

85 Saint Nicholas Terrace CDI 3.366

New York, NY 10031-1246

EMAIL: bikson@ccny.cuny.edu

TWITTER: @marombikson

HOME: neuralengr.org/biksonLAB: neuralengr.orgNONPROFIT: safetoddles.orgCONFERENCE: neuromodec.orgCORPORATE: soterixmedical.com***Ph.D. in Biomedical Engineering***

2000

Case Western Reserve University, Cleveland, OH

Thesis title: Role of non-synaptic mechanisms in the generation and control of epileptiform activity.

B.S. in Biomedical Engineering (Electrical Engineering Concentration)

1995

Johns Hopkins University, Baltimore, MD

Research Experience/Appointments:(Shames) Professor of Biomedical Engineering 2014-present
The City College of New York of the City University of New York.

New York, N.Y. (2017)

Associate Professor of Biomedical Engineering 2008-2014
The City College of New York of the City University of New York.
New York, N.Y.Associate Professor, Programs in Engineering and Biology – Neuroscience 2008-2014
The Graduate School of the University Center of the City University of New York
New York, N.Y.Co-Founder, Board Member 2009-present
Soterix Medical Inc. (SMI)
New York, NYHarold Shames Assistant Professor of Biomedical Engineering 2003-2007
The City College of New York of the City University of New York.
New York, N.Y.Assistant Professor, Programs in Engineering and Biology - Neuroscience 2003-2007
The Graduate School of the University Center of the City University of New York

New York, N.Y.

Post-Doctoral Research Fellow Prof. J.G.R. Jefferys, Neurophysiology Unit, University of Birmingham Birmingham, U.K.	2000 – 2003
NIH/Whitaker Trainee. Prof. D.M. Durand, Neural Engineering Center, Case Western Reserve University Cleveland, OH.	1996-2000
Research Associate. Sontra Medical, L.P., Cambridge, MA.	1995-1996
Laboratory Technician. Microfabrication Laboratory, Prof. N. Sheppard, Johns Hopkins University Baltimore, MD.	1994-1995

Research Support:

[Small Grants indicated separately under Awards/Honors]

Current:

“Ceragem U.S. East Centers For Excellence”

PI Marom Bikson
Agency/Mechanism: Ceragem Clinical
Period/Cost 2/2023-2-2024 \$100k

“Early Intervention Orientation and Mobility App with Pediatric Belt Cane-Smart Belt”

PI: Abhi Datta (Soterix Medical), Grace Ambrose-Zaken (Safe Toddles), co-PI Marom Bikson
Agency/Mechanism: U.S. Department of Education: Institute of Education Sciences Small Business Innovation Research Program ED/IES SBIR 2021 Phase 2
Period/Cost: 5/15/2022-5/14/2024 \$1m

Investigation of Independent Walking Before and With Pediatric Belt Canes”

PI: Grace Ambrose-Zaken (Safe Toddles), co-PI: Marom Bikson
Agency/Mechanism: Lavell Fund for the Blind
Period/Cost: 10/1/2021-10/1/2023 \$356k
Scope: Improve independent walking in learners aged five and younger with visual impairments.

“Quantifying neuromodulation on spinal circuits”

PI: Marom Bikson
Agency/Mechanism: Boston Scientific Corporation
Period/Cost: 03/18/2021-6/02/2023 \$250k
Scope: Characterize the effects of neuromodulation on spinal circuits.

“Non-Invasive Vagal Nerve Stimulation in Patients with Opioid Use Disorders”

PI: James Douglas Bremner (Emory) & Omer Tolga Inan (Georgia Tech). Sub-PI: Marom Bikson
Agency/Mechanism: NIH-NIDA UG3DA048502 / UH3DA048502
Funding Period/Cost: 8/15/2020- 7/31/2025 CCNY component \$551k

Scope: Develop advanced non-invasive auricular stimulation technology.
 Effort: 0.50 summer month

"Bridges to the Baccalaureate Research Training Program at LaGuardia Community College"
 PI: Hendrick Delcham (LaGCC), MPI: Marom Bikson (CCNY)
 Agency/Mechanism: NIH-NIGMS T34GM137858
 Funding Period/Cost: 8/1/2020- 7/31/2025 CCNY component \$49k
 Scope: The major goal of this project is to provide mentored research experiences to qualified minority, economically disadvantaged or disabled students.
 Effort: 0.25 summer month

"kHz frequency Spinal Cord Stimulation: Novel Temperature-Based Mechanisms of Action"
 PI: Marom Bikson (CCNY), co-I: Luis Cardoso (CCNY) and John Martin (CUNY SoM)
 Agency/Mechanism: NIH-NINDS 1R01NS112996-01A
 Funding Period/Cost: 5/1/2020- 4/30/2025 \$1.7m
 Scope: Develop a novel mechanism of SCS using advanced computational and animal models

"Open-source computational modeling of Spinal Cord Stimulation (SCS) to enhance dissemination of 1R01NS112996"
 PI: Marom Bikson (CCNY)
 Agency/Mechanism: NIH-NINDS 3R01NS112996-01A1S1
 Funding Period/Cost: 7/1/2021- 4/30/2023 \$314,000
 Scope: Enhances within-scope resource dissemination of the awarded 1R01NS112996 parent award by developing an open-source SCS modeling tool that predicts current flow and heating

"The coupled vascular hypothesis for transcranial direct current stimulation (tDCS)"
 PI: Marom Bikson, co-I: John Tarbell (CCNY) and Bingmei Fu (CCNY)
 Agency/Mechanism: NIH-NINDS 1R01NS101362-01
 Funding Period/Cost: 4/1/2017-3/31/2023 \$1.7m
 Scope: New mechanism of brain stimulation.
 Effort: 1 Month (8%)

Past:

"Effects of direct-current stimulation on synaptic plasticity"
 PI: Lucas Parra, co-PI Marom Bikson
 Agency/Mechanism: NIH-NINDS 1R01NS095123-01
 Funding Period/Cost: 5/2016-4/2022 \$1.7m
 Scope: tDCS on neuronal plasticity in brain slices.
 Effort: 1 Summer Month (8%)

"Early Intervention Orientation and Mobility App with Pediatric Belt Cane-Smart Belt"
 PI: Abhi Datta (Soterix Medical), Grace Ambrose-Zaken (Safe Toddles), co-PI Marom Bikson
 Agency/Mechanism: U.S. Department of Education: Institute of Education Sciences Small Business Innovation Research Program ED/IES SBIR 2021 Phase I
 Period/Cost: 5/1/2021-12/1/2021 \$200k

Title: Redacted
 PI: Marom Bikson
 Agency/Mechanism: GlaxoSmithKline (GSK)
 Funding Period/Direct Cost: 8/15/2019-12/31/2021 \$319k
 Scope: Redacted

"Repairing the Damaged Corticospinal Tract after Cervical Spinal Cord Injury"

PI: John Martin. Co-I Marom Bikson
 Agency/Mechanism: NYS DOH, DOH01-C30606GG
 Funding Period/Total Cost 11/2015-10/2018 \$990k
 Scope: This grant supports developing a new treatment for SCI.

"Cellular Mechanisms of High-Frequency SCS" (multiple phases)

PI: Marom Bikson
 Agency/Mechanism: Boston Scientific ISR. ISRN0014
 Funding Period/Direct cost: 3/2016-9/2017 \$384k
 Scope: This grant supports research on high frequency Spinal Cord Stimulation.

"Wireless Pulse Oximetry (WiPOX) for Diagnosing Intra-Operative Ischemia"

PI: Marom Bikson. Co-I Prasad Adusumilli
 Agency/Mechanism: NIH-NIBIB (R03) #5R03EB017410-02
 Funding Period/Direct Cost: 4/2014-3/2017 \$100k
 Scope: This grant supports designing a new features on the WiPOX.

"Preclinical Evaluation, Clinical Trial Preparation and a Prospective Clinical Trial of Intra-operative Real-time Tissue Oxygenation Monitoring by Wireless Pulse Oximetry (WiPOX)"

Project PI: Marom Bikson, Prasad Adusumilli; Program PI Karen Hubbard
 Agency/Mechanism: NIH-NCI (U54) #5U54CA132378-07
 Funding Period/Direct Cost: 10/2013-9/2016 \$750k
 Scope: This grant supports the development of intra-operative medical sensors.

"High resolution anatomical and physics-based biomechanical models of auditory regions for predicting effects of neuromodulation and implantable devices used to restore hearing and balance"

PI: Marom Bikson, Co-PI Luis Cardoso
 Agency/Mechanism: DoD, QUASAR (FA8650-12-D-6280, Task Order 0036)
 Funding Period/Total Cost 6/1/15-9/30/2016 \$106k
 Scope: Novel simulations for hearing transduction

"Supplement Phase IIA Griep-Act-Reposition (GAR) platform"

PI: Marom Bikson (sub-award).
 Agency/Mechanism: NSF, sub-award by Actuated Medical Inc. #5042-S01
 Funding Period/Total Cost (sub-award) 5/2015-2/2016 \$147k
 Scope: This grant supports design if an intraoperative ablation device.
 Effort: 1 Academic Month (8.3%).

"Modulation of blood-brain-barrier (BBB) permeability by tDCS relevant electric fields"

PI: Marom Bikson. Co-PI John Tarbell, Co-PI Bingmei Fu
 Agency/Mechanism: NIH-NIBIB (R21) 5R21EB017510-02
 Funding Period/Direct Cost: 5/2014-4/2016 \$230k

"Cellular Mechanisms of Transcranial Direct Current Stimulation"

PI: Marom Bikson
 Agency/Mechanism: USAF, Air Force Research Lab (AFRL) #FA9550-13-1-0073
 Funding Period/Cost: 3/2013-2/2016 \$570k
 Scope: This grant supports the testing the cellular mechanisms of DCS.

"A naturalistic study of transcranial Electrical Stimulation"

PI: Marom Bikson. Co-PI Berkan Guleyupoglu
 Agency/Mechanism: Thync Inc.

Funding Period/Direct Cost:	7/2014-10/2014	\$266k
"Effects of weak applied currents on memory consolidation"		
PI: Lucas Parra (US), Lisa Marshall (Germany). Co-PI Marom Bikson		
Agency/Mechanism: NIH/NSF CRCNS (5R01MH092926-05)		
Funding Period/ Cost:	9/2010-8/2015	\$628k
"High-Density Transcranial Electrical Stimulation"		
PI: Marom Bikson		
Agency/Mechanism: Wallace Coulter, Early Career Award in Translational Research-Phase 1,2		
Funding Period/ Direct Cost (with supplements) 9/2009-12/2014		\$510k
"Computational and 3D-printed reconstruction of head following TBI"		
PI: Marom Bikson.		
Agency/Mechanism: Burke Research Institute		
Funding Period/Direct Cost:	5/2015-6/2015	\$44k
"Sub-mm high-resolution models for rational and advanced neuromodulation: cranial nerve targets and combination with cochlear implants"		
PI: Marom Bikson		
Agency/Mechanism: DoD Quick Reaction USAFSAM Assessments, Studies, Analysis, Evaluation, and Research (QUASAR)		
Funding Period/Cost:	7/2013-6/2014	\$248k
"High Definition Cathodal Transcranial Direct Current for Treatment of Focal Status Epilepticus"		
PI: Alexander Rotenberg (Harvard Medical), Co-PI Marom Bikson, Co-PI Abhishek Datta (Soterix Medical Inc.)		
Agency/Mechanism: Epilepsy Therapy Project/Epilepsy Found: New Therapy Grants Program		
Funding Period/Cost:	9/2012-8/2014	\$214k
"DoD Computational Center for Rational tDCS"		
PI: Marom Bikson		
Agency/Mechanism: Air Force Defense Research Sciences Program: DURIP		
Funding Period/Cost (direct):	9/2013-8/2014	\$250k
"Development and Validation of Thoracic Endoscopic Surgery Simulators to Conduct a Prospective Randomized Crossover Study of Simulators vs. Didactics for Teaching and Assessing Medical Students and Surgical Trainees Technical Skills"		
PIs: Marom Bikson and Prasad Adusumilli, Program PI Karen Hubbard		
Agency/Mechanism: NIH-NCI U54 (Pilot Project)		
Funding Period/Direct Cost:	8/2011-7/2013	\$220k
"Targeted transcranial electrotherapy device to accelerate stroke rehabilitation"		
PI: Lucas Parra (Soterix Medical Inc.), PI (CCNY) Marom Bikson		
Agency/Mechanism: NIH-NINDS STTR		
Funding Period/Cost:	8/2011-1/2013	\$530k
"A prospective clinical trial to assess the efficacy of real-time intraoperative monitoring of tissue oxygenation by wireless pulse oximetry (WiPOX) in reducing anastomotic complications following esophagogastrectomy"		
PIs: Marom Bikson and Prasad Adusumilli, Program PI Karen Hubbard		

Agency/Mechanism: NIH-NCI U54 (Pilot Project)		
Funding Period/Direct Cost:	9/2010-8/2012	\$200k
 “System for Focal Cranial Electrical Stimulation”		
PI: Lucas Parra; Co-PI Marom Bikson		
Agency/Mechanism: DARPA/DSO		
Funding Period/Cost:	6/2009-9/2011	\$450k
 “Role of field effects in spike time coherence”		
Sub Proposal PI: Marom Bikson		
Agency/Mechanism: NIH SO1 (RO1 level)		
Funding Period/Direct Cost:	2/2007-1/2011	\$400k
 “A national urban model for biomedical engineering undergraduate education”		
PI: Sheldon Weinbaum, Co-PI Marom Bikson		
Agency/Mechanism: NIH		
Funding Period/Direct Cost:	9/2006-8/2011	\$2.5mil
 “System for Focal Cranial Electrical Stimulation – Safety and Efficacy Evaluation”		
PI: Lucas Parra; Co-PI Marom Bikson		
Agency/Mechanism: DARPA/DSO		
Funding Period/Cost:	12/2009-6/2011	\$337k
 “Indirect mechanisms of DBS: Joule heating and electroporation”		
PI: Marom Bikson		
Agency/Mechanisms: NIH R03		
Funding Period/Direct Cost:	3/2007-2/2009	\$100k
 “Technology for improved drug delivery to the brain.”		
PI: Marom Bikson		
Agency: Andy Grove Foundation		
Funding Period/Direct Cost:	9/2004-9/2007	\$90k
 “CCNY/MSKCC Biomedical Engineering Partnership”		
PI: John Tarbell, Sub-Proposal PI: Marom Bikson		
Sub-proposal title: “Improved electrochemotherapy protocols for the treatment of solid tumors”		
Agency/Mechanism: NIH-NCI P20		
Funding Period/Direct Cost (Sub-Proposal):	12/2005-8/2007	\$118k
 “Quantification of neuronal polarization by non-uniform electric fields”		
PI: Marom Bikson		
Agency/Mechanism: CUNY Research Equipment Grant		
Funding Period/Direct Cost:	3/2005-2/2006	\$30k

Awards/Honors (*Small Grants/Contracts <\$35k):

CHARGE Syndrome Grant (\$19k) 2022
 Jake Zabara Grant 2019
 Harold Shames Professor 2018
 Ohio State University Contract (*\$10k)

PSC-CUNY Award 2004, 2005, 2012, 2017, 2019 (*\$12k)
 ElectroCore Inc. Research Award 2015/2016 (\$10k)
 NuCalm Inc. Research Award 2015 (\$10k)
 Fenexy Foundation SAB 2015
 PROSE Award, Honorable Mention "The Stimulated Brain" 2015
 American Institute for Medical and Biological Engineering (AIMBE) College of Fellows 2015
 Biomedical Scholarship Fund for New Americans 2014 (\$8k)
 MSKCC Research SubAward "WiPOX Development" 2013 (*\$35k)
 2012 CCNY Mentoring Award in Architecture, Biomedical Education, Engineering and Science
 OneMed Forum, University Technology Selection 2012
 University Research and Entrepreneurship Symposium technology selection 2012
 "UnConference" Cleveland, Invitee 2011
 Memorial Sloan Kettering Cancer Center-CCNY Development Fellowship 2011 (*\$25k)
 New York City BioAccelerate Award, Finalist 2010
 CUNY selection, NYC Emerging Medical Technologies Summit 2010
 New York City Bioaccelerate Award, Finalist 2009
 Wallace H. Coulter Early Career Award 2009 (see major grants)
 Louis Stokes Alliance, Outstanding Mentor Award 2009
 Catell Fellowship 2008-2017*
 Conference on Transcranial Magnetic and Direct Current Stimulation Opening Lecture 2008
 COMSOL conference Popular Choice Poster 2008
 Harold Shames Presidential Junior Faculty Professor 2003-2007 (*)
 Introduction to BME Student Teaching Award 2005
 Introduction to BME Student Teaching Award 2004
 Brain (Journal) Travel Grant 2002 (*)
 University of Birmingham, Rowbotham Bequest 2001 (*)
 The Physiological Society, Affiliate Grant 2001 (*)
 NIH Trainee 1999-2000
 Whitaker Trainee 1996-1998
 Functional Electrical Stimulation Robinson Award 1999
 CWRU BME Research Day Student Presentation 1st place 1999
 Johns Hopkins University Physiological Foundation Lab Design Award 1995

Professional Activities (academic only, for Industry see consulting)

Member: American Institute for Medical and Biological Engineering, CUNY Academy for the Humanities and Sciences, Society for Neuroscience, Biomedical Engineering Society, Reuters Insight Expert Network, HG Legal Expert Witness

Editor (board): Brain Stimulation (2012, Technology and Modeling Editor 2013-), NeuroImage: Clinical (2012), Scientifica (2012-), Journal of Neural Engineering (2019-), Guest Editor (Special Issues): Frontiers in Neuroscience (2013) "Open questions on the mechanisms of neuromodulation with applied and endogenous electric fields", Guest Editor (Special Issues): Frontiers in Neuroscience (2016) Revisiting the Effectiveness of Transcranial Direct Current Brain Stimulation for Cognition: Evidence, Challenges, and Open Question, Current Opinion in Biomedical Engineering (2016-)

North American Neuromodulation Society, Board of Directors (2022-2024)

Ad hoc reviewer: Journal of Obstetrics and Gynaecology Research, Cortex, Neurorehabilitation and Neural Repair, Brain Research, European Journal of Neuroscience, Journal of Clinical Neurophysiology, Journal of Neurophysiology, Epilepsia, IEEE Transactions in Biomedical Engineering, IEEE Transactions of Neural Systems and Rehabilitation Engineering, Journal of Neural Engineering, Medical & Biological Engineering & Computing, Journal of Computational

Neuroscience, Annals of Biomedical Engineering, International Journal of Neural Systems, PLOS, Journal of Neuroengineering and Rehabilitation, Brain Stimulation, Science Center programs of the U.S. Department of State, NIH, The Royal Society (UK), Prader-Willi Syndrome Association (USA), Pain, Experimental Neurology. United States-Israel Binational Science Foundation, Action Medical Research, US Air Force Office of Scientific Research, Frontiers, South Carolina's Institutions of Higher Education, Human Brain Mapping, International Journal of Developmental Neuroscience. NIH-NINDS ZNS1 BRAIN Special Emphasis Panel (2014), The Swiss National Science Foundation, Review of Scientific Instruments, Brain Connectivity, European Union, Netherlands Organisation for Scientific Research, NIH Stimulating Peripheral Activity to Relieve Conditions (SPARC) Special Panel (2017), Biological Psychiatry, Nature Communications, Cognitive, Affective, & Behavioral Neuroscience, The European Science Foundation, Neuropsychologia, Bioelectronic Medicine, Elife (Guest Editor), Special Emphasis Panel/Scientific Review Group 2020/05 ZRG1 ETTN-D (2020), Journal of Clinical Medicine, Engineering in Medicine and Biology Conference (2020), Neuroscience Research, Journal of Electromyography and Kinesiology, Brain Sciences, Alzheimer's Research & Therapy, NIH Bioengineering of Neuroscience, Vision and Low Vision Technologies Study Section Emerging Technologies and Training Neurosciences Integrated Review Group Review Group (2020), NIH ZMH1 ERB-Q-04 (2021), 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (2021), NIH 2021/10 ZNS1 SRB-A (47), NIH 2021/10 ZNS1 SRB-M (05), Nanomaterials, Austrian Science Fund (FWF), MRC (2021), NINDS ZNS1 SRB G (46) (2021), Innovation and Technology Commission, Hong Kong (2022), NIH (2022 NSD-C panel review. NIH ZNS1 SRB-M 09 (2022).

Encyclopedia BRAIN (Wiley-IEEE Press) Area Editor - Neuromodulation (2021).

Founding member: Introducing the International Consortium on Neuromodulation for COVID-19 (ICNC) (2020-)

Co-director, Neural Engineering, New York Center for Biomedical Engineering (2005-)

The City College of New York/City University of New York Medical School Institutional Animal Care and Use Committee (2004-2010)

Co-director, Howard Hughes Medical Institute Program for Undergraduates at CCNY (2005-2009)

Search Committee CCNY Associate Provost for Research (2020)

Committee Member, Memorial Sloan Kettering Cancer Center/City College of New York Partnership (2008-2010)

Executive Coordinating Committee, NIH Minority Undergraduate Biomedical Education Program at The City College of New York (2004-2011)

2014 Provost's Faculty Awards Committee (2014)

CCNY Research Ethics Committee (2014-2017)

IFCN TMS Safety Meeting, Siena, Italy (2018)

Founding Board for an Entrepreneurship Effort leveraging the GSOE (2011)

Founding Member, CCNY Pathways Project Innovation and Entrepreneurship into the engineering curriculum (2014)

Advisory Committee, CUNY Hub for Innovation and Entrepreneurship (2012-2016)

External Advisory Committee for the University of New Mexico - Center for Brain Recovery and Repair (2017-)

External Advisory Committee board University of Pennsylvania - brainSTIM center (2020-)

Director, Kaylie Entrepreneurship Prize (2012-2016) of the CCNY Zahn Center

Scientific Advisory Board

Boston Scientific (2017-)

GlaxoSmithKline (2018-2020)

Halo Neuroscience (2019-2021)

Conference organization:

Potomac Institute for Policy Studies, Conference on Stun Devices (2005):

Moderator: *Health Effects Research Group*

IEEE Engineering in Medicine and Biology Society Conference (2006)

Track Chair: *Neural interfacing and neurorobotics*

IEEE Engineering in Medicine and Biology Society Conference (2006)

Session Chair: *Neural Stimulation and Prostheses 2*

IEEE Engineering in Medicine and Biology Society Conference (2006)

Session Chair: *Neural Stimulation and Prostheses VII*

Design of Medical Device Conference (2010)

Scientific Program Committee

Design of Medical Device Conference (2011)

Scientific Program Committee

Design of Medical Device Conference (2012)

Scientific Program Committee, Track Chair

International Symposium on Biomedical Engineering and Medical Physics, Latvia (2012)

Program Committee

Design of Medical Device Conference (2013)

Scientific Program Committee, Track Chair

Soterix Medical East Workshop at Burke Rehabilitation Hospital (2013)

Conference co-Director

NYC Neuromodulation (2013)

Conference co-Founder and Chair

NYC-tDCS Workshop - Neuromodec (2014)

Organizing Committee

Neuromodec tDCS Workshop – University of Florida (2014)

Organizing Committee

1st International Brain Stimulation Conference (2015)

Scientific Committee

NYC Neuromodulation (2015)

Conference co-Founder and Chair

Air Force, Dosimetry and Mechanisms Mediating Responses to tDCS (2015)

Moderator

NYC-tDCS Workshop - Neuromodec (2014)

Organizing Committee

Minnesota Neuromodulation Symposium (2015)

International Program Committee

Brain and Spinal Cord Stimulation in Chronic Pain Syndromes (2014)

Program Committee

NYC Visiting Fellowship in Transcranial Magnetic Stimulation (2015)
Organizing Committee
NYC Fellowship in Transcranial Direct Current Stimulation (2015)
Director
Updates on tDCS in Clinical Trials (2015)
Organizer
6th International Conference on Transcranial Brain Stimulation (2016)
Session Chair
NIH Symposium on Transcranial electrical stimulation (tDCS, tACS): Mechanisms, technologies and therapeutic applications (2016)
Co-Organizer
Minnesota Neuromodulation Symposium (2016)
Member International Program Committee
NYC Fellowship in Transcranial Direct Current Stimulation (2016)
Director
Neuromodulation Technology Meeting (2016)
Chair
NYC Neuromodulation (2017)
Chair
Minnesota Neuromodulation Symposium (2017)
Member International Program Committee
International Neuropsychological Society, New Orleans (2017)
Session Chair: Electrical brain stimulation and cognitive disorders
NIH Transcranial Electrical Stimulation (tES): Mechanisms, Technology and Therapeutic Applications (2017)
Co-Organizer
International Neuromodulation Society 3rd World Congress, Scotland (2017)
Session organizer and moderator
Neuromodec tDCS workshop, Barcelona (2017)
Co-Organizer
NYC Fellowship in Transcranial Direct Current Stimulation (2017)
Director
tDCS course at the New Mexico Clinical Neuromodulation Conference (2017)
Course co-Director
North American Neuromodulation Society. Pre-Conference Continuum of Care from Wearables to Non-Invasive Neuromodulation (2018)
Co-Organizer
North American Neuromodulation Society, Scientific Program Committee (2018)
Member
NYC Neuromodulation and NANS Summer Series (2018)
Co-Chair
2nd International Neuroergonomics Conference, tDCS Course (2018)
Co-Organizer
North American Neuromodulation Society. Pre-Conference Continuum of Care from Wearables to Non-Invasive Neuromodulation (2019)
Co-Director
North American Neuromodulation Society, Scientific Program Committee (2019)
Member
2nd International Brain Stimulation Conference, Vancouver, Canada (2019)
Programme Committee
Joint Meeting: Neuromodulation the Science, NYC Neuromodulation (2019)
Co-Director
3rd International Neuroergonomics Conference, Germany (2020)
Scientific Program Committee

3rd International Neuroergonomics Conference, Germany (2020)
tDCS Workshop
2020 International Symposium on Translational Research in Brain Stimulation with
NYC-Neuromodulation (2020)
Co-Chair
7th International Conference on Non-Invasive Brain Stimulation (2020)
Program Committee
7th International Conference on Non-Invasive Brain Stimulation (2020)
Computational Modeling Workshop
North American Neuromodulation Society (2020)
Scientific Program Committee
North American Neuromodulation Society. Pre-Conference Engineering Principles of Spinal
Cord Stimulation and Deep Brain Stimulation for Clinicians (2020)
Co-Organizer
NYC Neuromodulation Online (2020)
Conference Chair
3rd International Neuroergonomics Conference (2021)
Scientific Committee
3rd International Neuroergonomics Conference (2021)
Workshop director: Introduction to practical methods in low-intensity transcranial
Electrical Stimulation
North American Neuromodulation Society, Scientific Program Committee (2021)
Member
5th International Network of tES-fMRI (INTF) (2021)
Co-Organizer
International Conference on Neurosciences and Rehabilitation (2021) - workshop director
Transcranial Direct Current Stimulation (tDCS): Advanced Theory and Practical
Demonstration
North American Neuromodulation Society, Scientific Program Committee (2022)
Member
Engineering principles of SCS and DBS: Foundations, industry updates, and emerging
concepts (2022)
Co-Chair
Neuromodulation The Science (2021)
Co-Director
Joint Meeting of International Neuroergonomics Conference with NYC Neuromodulation
(2022)
Co-Chair
NAPA Pain, Neuromodulation The Science (NTS) track coordinator (2023)
NTS Co-Coordinator
North American Neuromodulation Society (2024)
Scientific Program Committee
International Neuromodulation Society (2024)
Scientific Program Committee
Co-Chair of the Noninvasive Brain Stimulation pre-conference
Co-Chair of the Brain: Non-Invasive Stimulation section
NYC Neuromodulation (2024)
Co-Chair
North American Neuromodulation Society (2025)
Scientific Program Committee Co-Chair

INVITED PRESENTATIONS:

University of Birmingham, Department of Pharmacology (2001):

“Suppression of spontaneous epileptiform activity in rat brain slices with DC and high frequency (AC) electric fields.”
Boston University, Center for BioDynamics (2003):
“Modulation of neuronal excitability by low- and high- amplitude electric fields.”
City University of New York, NY Center for Biomedical Engineering (2003):
“Effects of electric fields on neuronal function: environmental safety and clinical applications.”
Albert Einstein College of Medicine, Department of Neuroscience (2003):
“Role of non-synaptic interactions in epileptic seizures”
City University of New York, Biology Department (2004):
“Non-synaptic and synaptic mechanisms in epilepsy”
George Mason University, Krasnow Institute (2004):
“Modulation of neuronal function by applied DC electric fields”
City College of New York, Frankenstein Exhibit Opening (2004)
Keynote speaker
Potomac Institute for Policy Studies, Conference on Stun Devices (2005):
“Electrical Stimulation: An Overview”
Albert Einstein College of Medicine, Epilepsy Research Group (2005)
“Measurements of the neuronal environments”
Life Science Career Development Conference (4th annual) session on Hot Trends in Biomedical Engineering (2005)
“Neural Engineering and Functional Electrical Stimulation”
IEEE Engineering in Medicine and Biology Society Conference (2006) Therapeutic Neural Engineering minisymposium
“Rational modulation of neuronal processing with applied electric fields”
Memorial Sloan Kettering Cancer Center/CCNY Symposium (2006)
“Design of rational electrochemotherapy protocols”
University of Maryland, Department of Psychology (2006)
“A functional role for extracellular potentials in the brain?”
Penn State University, Engineering Science and Mechanics (2007)
“Amplification of small electric fields through spike timing; implications for brain oscillations.”
Columbia University, BME Neural Seminar (2008)
“Rational Design of Electrotherapy Devices”
Memorial Sloan Kettering Cancer Center/CCNY Translational Research Symposium (2008)
“Technology for electrochemotherapy and electro-therapeutic drug delivery through blood barriers”
Neural Interfaces Conferences, Cleveland, OH (2008)
“Rational design of sub-threshold stimulation protocols”
Third International Conference on Transcranial Magnetic Stimulation and Direct Current Stimulation (2008)
“Insights from in vitro studies, designing targeted stimulation protocols”
Third International Conference on Transcranial Magnetic Stimulation and Direct Current Stimulation (2008) Goettingen, Germany OPENING LECTURE
“From TMS to tDCS to Modulated therapies: Biophysics of electrical therapy design”
Neuropsychology, Queens College and the Graduate Center CUNY (2008)
“New technology for non-invasive electrical treatment of brain disorders: High-Density transcranial Direct-Current Stimulation”
The Mind Research Network (MRN), University of New Mexico (2008)
“Targeted brain modulation with functional high-density transcranial electrical stimulation”
National Institute of Neurological Disorders and Stroke -NIH (2009)

"Mechanisms and Optimization of tDCS"

Design of Medical Device Conference (2009)
"High-Density Transcranial Electrical Stimulation (HD-tES)"

Fourth International Workshop on Seizure Prediction (2009)
"Modulating seizure-permissive states with weak electric fields"

Center for Noninvasive Brain Stimulation, Harvard Medical School, Beth Israel Deaconess Medical Center (2009)
"Towards Individualized tDCS Therapy: Biophysical Insights and High-Density Technology"

Weill Cornell Continuing Medical Education, Cornell Medical College (2009)
"New – and not so new- technology to control seizures with electrical stimulation devices."

Psychiatry Grand Rounds Series at the Medical University of South Carolina (2009)
"High-Density Transcranial Electrical Stimulation: Non-invasive and painless targeting of cortical structures for neurological electrotherapy."

National Institute of Aging – NIH (2009)
"A new medical device for non-invasive neuro-modulation and therapy with very low-intensity electrical currents"

The New York City Investment Fund: BioAccelerate Prize (2010)
"Breakthrough in Electrotherapy Technology: High-Density Transcranial Electrical Stimulation (HD-tES)"

II International Symposium in Neuromodulation (2010)
"In vitro studies: designing targeted stimulation protocols."

II International Symposium in Neuromodulation (2010)
"Computer modeling: what have we learned to design new interventions?"

NYC Emerging Medical Technologies Summit (2010)
"H-sink technology for medical implant safety."

Clinical, Assessments and Interventions Updates in Neurorehabilitation, Harvard Medical School, Boston (2010)
"Modeling the effects of Neuromodulatory tools."

Interdisciplinary Neuroimaging Research Meeting, University of South Carolina (2010)
"Next generation non-invasive electrical neuromodulation."

Stroke Rehabilitation Research, Kessler Foundation Research (2011)
"Customized and individualized tDCS dose through computational models"

Department of Biomedical Engineering, University of Ilmenau, Germany (2011)
"High-resolution FEM models for advanced transcranial electrical therapy."

8th Practical Course in Transcranial magnetic and electrical stimulation, German Neuroscience Society (2011)
"Optimizing tDCS using computer modeling."

University Medical Innovation Showcase, Javits Convention Center, NYC, NY (2011)
"High-Definition Transcranial Electrical Stimulation (HD-tES): Non-invasive, low-intensity, electrical Neurostimulation"

New York City Emerging Technologies Summit "Opportunities in Neuroscience" (2011)
"Non-invasive electrotherapy"

III International Symposium in Neuromodulation (2011)
"Computer modeling in neuromodulation: how they can help the clinician."

III International Symposium in Neuromodulation (2011)
"High-Definition Transcranial DC Stimulation."

Manhattan Adult Attention Deficit Disorder Support Group (2011)
"From technology to treatment: What can we do to expedite progress?"

tDCS Symposium, Neuro-Cognitive Rehabilitation Network (NCRRN) University of Pennsylvania (2011)
"Physiology of tDCS"

Harvard Medical School – tDCS course (2011)

“Determining tDCS dose – Electrode montage design for brain targeting.”
Neuropsychology and Neuroscience Laboratory, Kessler Foundation (2011)

“tDCS mechanisms and dose design for clinical trials”
Clinical, Assessments and Interventions Updates in Neurorehabilitation (HMS-CME), Harvard Medical School, Boston (2011)

“Modeling the effects of Neuromodulatory tools.”
Lawrence N. Field Center for Entrepreneurship Baruch College (2011)
Faculty Entrepreneurship Roundtable

Photo-Electro-Magnetic Biostimulation of Performance and Protection, Fort Sam Houston (2011)

“Deployable and targeted neuromodulation with High-Definition transcranial Direct Current Stimulation.”
SUNY Downstate Medical Center (2011)

“Deployable and targeted neuromodulation with High-Definition transcranial Direct Current Stimulation.”
Neuroscience Center, College of Staten Island, CUNY (2012)

“Modulating brain function with transcranial Direct Current Stimulation: Clinical promise and next generation technology.”
Cooper Union, Seminars of Biomedical Engineering (2012)

“Rapid medical device prototyping: From idea to patient”
Harvard Medical School – tDCS practical (2012)

“Getting the most out of tDCS – Optimizing dose for targeting.”
IV Symposium International on Neuromodulation - Sao Paulo, Brazil (2012)

“Cellular mechanisms of tDCS: From classic doctrine to new directions.”
IV Symposium International on Neuromodulation - Sao Paulo, Brazil (2012)

“tDCS dose guidelines across the extremes of age and size, and following stroke.”
American Society for Neurorehabilitation, Vancouver (2012)

Panel: Evidence-based approaches in neuro-rehabilitation
4th Annual CCNY-MSKCC Partnership Translational Research Symposium (2012)

“Real-Time Intraoperative Tissue Oximetry”
Clinical, Assessments and Interventions Updates in Neurorehabilitation (HMS-CME), Harvard Medical School, Boston (2012)

“Modeling the effects of Neuromodulatory tools.”
Alameda County Medical Center (2012)

“Fundamentals and mechanisms of tDCS”
10th Göttingen Meeting of the German Neuroscience Society (2013) – Germany

“Targeting of transcranial Direct Current Stimulation”
Fifth International Conference on Transcranial Magnetic Stimulation and Direct Current Stimulation (2013) Leipzig, Germany LECTURE AND WORKSHOP CHAIR

“Optimized design of tDCS with computational models”
The Leslie and Susan Gonda Multidisciplinary Brain Research Center at Bar-Ilan University, Israel (2013)

“Transcranial direct current stimulation: Devices, therapies and clinical trials”
Department of Biomedical Engineering, Ben-Gurion University of the Negev, Israel (2013)

“High-Definition transcranial Direct Current Stimulation: Non-invasive and targeted neuromodulation.”
Nathan Kline Institute for Psychiatric Research, New York (2013)

“High-Definition Stimulations Targeting Approaches for tDCS”
University of New Mexico, Psychology Department (2013)

“Frontiers of neuromodulation technologies for cognitive neuroscience and neuropsychiatric treatment”
UC Davis Center for Mind and Brain (2013)

“High-Definition tDCS”
University of Wisconsin, Department of Neurology (2013)

"Mechanisms and technology of transcranial Direct Current Stimulation"
Magstim Neuroenhancement Conference, Oxford UK (2013)
"Individualized and targeted neuromodulation with High-Definition DCS"
University of Oxford, Nuffield Dept of Clinical Neurosciences (2013)
"Making Sense of Transcranial Direct Current Stimulation: From High-Definition to Individualized Targeting"
American College of Neuropsychopharmacology Annual Meeting (2013)
"At the Crossroads of Physics, Physiology, and Psychiatry: Rational Design of Noninvasive Neuromodulation Therapies."
Society for Neuroscience Meeting (2013)
"Therapeutic Neuromodulation with Transcranial Current Stimulation: Ready for Rational Design?"
Cleveland FES Center (2013)
"Fundamentals of transcranial Direct Current Stimulation"
Washington University (2013)
"Too good to be true? tDCS applications in cognitive performance, neurology, and psychiatry."
V Symposium International on Neuromodulation - Sao Paulo, Brazil (2013)
"*Making tDCS effective and specific: insights from computational and animals models.*"
V Symposium International on Neuromodulation - Sao Paulo, Brazil (2013)
"*tDCS in children: dose consideration.*"
National Institute of Health – Medical Center (2013)
"Modeling of transcutaneous spinal Direct Current Stimulation (tsDCS)"
AFOSR Human Performance and Biosystems Program Meeting (2013)
"Toward a quantitative understanding of tDCS"
NYC Neuromodulation (2013) CONFERENCE CHAIR AND KEYNOTE
"The next generation of transcranial electrical stimulation technologies."
International Congress of Clinical Neurophysiology, Berlin, Germany (2014)
"NIBS: cellular and molecular mechanisms"
11th Practical Course "Transcranial magnetic and electrical stimulation", Germany (2014)
"Network oscillations as a substrate for tACS modulation of learning and plasticity: cellular and quantitative insights from brain slice."
Columbia Neurological Institute (2014)
"A new paradigm for non-invasive seizure control: the "DSES" trial and adaptive High-Definition tDCS"
Adaptive Response in Biology and Medicine, University of Amherst (2014)
"Neuromodulation with weak transcranial electrical stimulation: Small things making a big difference"
Harvard Medical School Neurorehabilitation Course (2014)
"The future of home-based neuromodulation treatments."
NYC tDCS Workshop (2014)
"Overview of tDCS dose."
2nd Annual Minnesota Neuromodulation Symposium (2014)
"Frontiers of non-invasive neuromodulation"
George Mason University (2014)
"Basic principles and practices of transcranial Direct Current Stimulation"
9th annual Neurotech Investing and Partnering Conference (2014)
"High-Definition transcranial Direct Current Stimulation"
IV Symposium International on Neuromodulation - Sao Paulo, Brazil (2014)
"*Technical requirement for home-use transcranial Direct Current Stimulation.*"
IV Symposium International on Neuromodulation - Sao Paulo, Brazil (2014)
"*State-of-the art tDCS protocols, techniques, and optimization.*"
Society of Biological Psychiatry Annual Meeting, New York (2014)

"*Biophysical Foundations of tDCS: Evidence from Computer Models and Animal Studies*"
The Zucker Hillside Hospital, New York (2014)
"transcranial Direct Current Stimulation (tDCS): technology, mechanisms, and applications in mental health"
Mount Sinai, Department of Psychiatry (2014)
"Introduction to neuromodulation with tDCS"
Harvard Medical School: Clinical Assessments and Intervention Updates in Neurorehabilitation (2014)
"Principles and Modeling of Transcranial Direct Current Stimulation"
University of Florida tDCS Workshop (2014)
Technology and modeling section.
Weill Cornell Medical College (2014)
"transcranial Direct Current Stimulation (tDCS)"
American Epilepsy Society Annual Meeting (2014)
"Transcranial DC stimulation for Seizures"
Medical University of South Carolina (2014)
"tDCS"
1st International Brain Stimulation Conference, Singapore (2015)
"Who, where, what, when, and why: Optimizing transcranial Direct Current Stimulation"
1st International Brain Stimulation Conference, Singapore (2015)
"Cellular mechanisms of tDCS: Insights from animal models"
1st International Brain Stimulation Conference, Singapore (2015)
"Understanding cellular targets of (HD) tDCS to optimize brain targeting"
3rd North America TMS Montreal, Canada (2015)
Comparing the focality of TMS and HD-tDCS
Winter Conference on Brain Research (2015)
"Shocking old/new world: moving towards the more selective stimulation of the human brain"
Air Force, Dosimetry and Mechanisms Mediating Responses to tDCS (2015)
"tDCS-Introduction and General Principles"
Albert Einstein College of Medicine (2015)
"transcranial Direct Current Stimulation: How can one thing work for everything?"
Brain and Spinal Cord Stimulation in Chronic Pain Syndromes, NYC (2015)
"Overview of neuromodulation approaches for pain"
Sophie Davis School of Biomedical Education CCNY (2015)
"Physics and neurophysiology makes tDCS better"
State University of New York at Binghamton (2015)
"Physical and neuroscience foundations of low-intensity brain stimulation"
Magstim Neuroenhancement Conference, Oxford UK (2015)
"Individualized and targeted neuromodulation with High-Definition DCS"
A dialogue with the cerebral cortex meeting. Barcelona Pain (2015)
"Modulating brain processing and learning with targeted non-invasive electrical stimulation"
V Symposium International on Neuromodulation - Sao Paulo, Brazil (2015)
"How does transcranial Direct Current Stimulation change cortical processing: Insights from animal models."
V Symposium International on Neuromodulation - Sao Paulo, Brazil (2015)
"Update on the use of High-Definition tDCS in clinical neurophysiology and trials."
University College London (2015)
"How to cure any disease and get smart: An overview of tDCS mechanisms"
World Science Festival (2015)
Panel: Electric Medicine and The Brain

NYC Visiting Fellowship in Transcranial Magnetic Stimulation (2015)
Fundamentals of electrical stimulation of the brain
Center for Addiction and Mental Health, Toronto (2015)
Design and optimization of tDCS for clinical trials: perspective from animal and computational studies
2015 North American Neuromodulation Society (NANS)
“High-definition transcranial direct current stimulation”
UCLA Neurology (2015)
“How does tDCS work for so many different things?”
NJIT (2015)
“The engineering foundations of non-invasive brain stimulation with weak currents”
Dupont Summit (2015) on Science, Technology, and Environmental Policy
“Ethics and technology of personal neuromodulation”
Columbia University, Teachers College (2016)
“Transcranial Direct Current Stimulation in behavioral, cognitive, social and clinical neuroscience.”
Plenary: 6th International Conference on Transcranial Brain Stimulation (2016)
How TDCS polarizes a highly folded cortex
IEEE ICES TC95, Plantation FL (2016)
“Engineering standards for tDCS”
Keynote: Michael C. Wilson Memorial Lecture, UNM (2016)
“Ethics and technology of personal neuromodulation”
2016 Society for Psychophysiological Research
Panel: Methods in tDCS
Keynote: 2016 42nd Northeast Bioengineering Conference (NEBEC)
“Engineering the Brain with Non-invasive Electrical Stimulation: Applications in cognition and treatment”
tedX Bushwick 2016
“A Tool for the Mind”
3rd Annual Symposium of Brain Imaging Center (BIC) at the Icahn School of Medicine at Mount Sinai, 2016
“Far field effects in Transcranial Direct Current Stimulation and Deep Brain Stimulation.”
Cohen Lab, NIH (2016)
“How tDCS works, and works for so many things.”
Late Summer School on Non-Invasive Brain Stimulation, Freiburg, Germany (2016)
“Translation aspects of tDCS: From rodents to humans”
Late Summer School on Non-Invasive Brain Stimulation, Freiburg, Germany (2016)
“Modeling and tDCS current distribution”
National Academies of Sciences, Engineering, and Medicine’s Forum on Neuroscience and Nervous System Disorders. (2016)
“Quantification of Dose with Devices”
2016 PACHE Investigators Workshop at the National Institute of Health NCI (2016)
“WiPOX for intra-operative monitoring of tissue oxygenation.”, Bethesda
NIH Symposium on Transcranial electrical stimulation (tDCS, tACS): Mechanisms, technologies and therapeutic applications (2016), Bethesda
“Computational modeling-assisted design of tDCS protocols”
Tinnitus Neurocognitive Approaches from Diagnostic to Rehabilitation workshop (2016), Brazil.
“tDCS for tinnitus”
Hunter College, CUNY (2016)
“The hype and reality around transcranial Direct Current Stimulation”
Brain and Mind Centre at Sydney University, Australia (2016)
“Zap my Brain”

American College of Neuropsychopharmacology Annual Meeting, Hollywood Florida (2016)
“Direct Current Stimulation Accelerates Synaptic Models of Learning in Animals.”
NIH Brain Initiative Investigators Meeting, Bethesda (2016)
“A toolbox to models tDCS”
International Neuropsychological Society, New Orleans (2017)
“The basics of tDCS: technology and mechanisms”
International Neuropsychological Society, New Orleans (2017)
tDCS practical course
Stevens Institute of Technology (2017)
Engineering neuromodulation devices.
International Neuromodulation Society 3rd World Congress, Scotland (2017)
“Introduction to Mechanistic Questions around High-Rate Stimulation and Overview of Methods for Reliable Electrophysiological Recording During High-Rate (10k) Stimulation” (session organizer and chair)
Pre-Conference on NIMBS to International Neuromodulation Society 3rd World Congress, Scotland (2017)
“Toward Markers of Target Engagement in tDCS”
American Pain Society (2017)
“Electroceuticals at home.”
Cumming School of Medicine, University of Calgary, Canada (2017)
“Promise and pitfalls of tDCS”
2nd International Brain Stimulation Conference (plenary), Barcelona, Spain (2017)
“tDCS and the folded, active, plastic brain.”
Neuromodec Barcelona tDCS Workshop, Barcelona, Spain (2017)
“Overview of tDCS”
New York University, New York (2017)
“Updates on the mechanisms of low-intensity electrical neuromodulation”
NIH NIDA Neuromodulation Workshop (2017)
“Medical device safety.”
The Science of Consciousness, Davis (2017)
“Non-invasive brain stimulation devices to change thought and behavior”
Northeastern University (2017)
“Translational Neural Engineering: Accelerated medical device design for treatment of neuro-psychiatric disorders and brain injury.”
Mt Sinai, Department of Neuroscience, New York (2017)
“Better science makes better neuromodulation: Accelerating the discovery of non-invasive brain stimulation techniques.”
Mt Sinai, Department of Neurosurgery, New York (2017)
“Major mechanistic questions and technology opportunities in Spinal Cord and Deep Brain Stimulation.”
ANT EEG-tDCS & TMS methodology in research and clinical research settings (2017)
“Technical aspects of tDCS/EEG”
New Mexico Clinical Neuromodulation Conference (2017)
“tDCS and complex folded brain.”
NIH NIMH on-Invasive Brain Stimulation E-Field Modelling Workshop (2017)
“ROAST and HD-Explore: Overview and Hands On Softwares to model transcranial Electrical Stimulation”
North American Neuromodulation Society (2018). Pre-Conference Continuum of Care from Wearables to Non-Invasive Neuromodulation
“Opening Remarks”
North American Neuromodulation Society (2018). Pre-Conference Continuum of Care from Wearables to Non-Invasive Neuromodulation
“Principles and Technology of tDCS”

North American Neuromodulation Society (2018)
“No effects of high-rate (multi-kHz) electric fields on brain slice on excitability”

North American Neuromodulation Society (2018)
“Temperature Increases by High-Rate Spinal Cord Stimulation”

Hermetic Dose Response Meeting, Amherst (2018)
“tDCS and Dose Response”

Columbia University, Teacher College (2018)
“How the busy brain responds to tDCS”

Society of Biological Physicality, New York (2018)
“The potential and limitations of transcranial Direct Current Stimulation”

Carolina Neurostimulation Conference (2018)
“tES is (not) in crisis”

Air Force Research Lab: tDCS Workshop (2018)
“State of the art in Biosensor/electrotherapy technology”

NYU Symposium on tDCS (2018)
“The good, the bad, and the ugly tDCS”

2nd International Neuroergonomics Conference (2018)
“Neuromodulation Technology for Neuroergonomics”

The Art and Science of Pain Management (2018)
“New advances in non-invasive technology for pain.”

IFCN TMS Safety Meeting, Siena, Italy (2018)
“New Machines and coils”

3rd European Conference on Brain Stimulation in Psychiatry (2018)
“The frontier of tDCS in psychiatry and the role of new technologies”

University of Southern California (2018)
“The promise and pitfalls of tDCS”

Wearable Tech + Digital Health + Neurotech Boston (2018)
“Downloading Personalized Brain Stimulation”

Annual Symposium of Artificial Intelligence, Advanced Digital Technologies, and Device Development (2018)
“Downloading Personalized Brain Stimulation”

Kessler Foundation (2018)
“Understanding the benefits and uses of tDCS.”

Mt Sinai BioDesign Science Series (2018)
“Downloading Personalized Brain Stimulation”

FutureWorks, NYC (2018)
“Thinking about personalized neuromodulation: Digital healthcare and brain stimulation.”

Hunter College, CUNY (2018)
“The biology of transcranial Direct Current Stimulation”

Drexel University (2018)
“Engineering personalized neuromodulation”

University of Maryland School of Medicine - Grand Rounds (2019)
“Mechanisms and applications of non-invasive electrical stimulation.”

University of Minnesota, Neuroengineering Seminar (2019)
“New technologies for personalized neuromodulation.”

North American Neuromodulation Society (2019)
“Hands-On: Non-Invasive and Wearable Devices, AR/VR for Pain”

North American Neuromodulation Society (2019)
“Non-Invasive Strategies for Affective Neuromodulation”

North American Neuromodulation Society (2019)
“Noninvasive Vagal Nerve Stimulation”

3rd International Brain Stimulation Conference, Vancouver, Canada (2019)
“Downloading Personalized Brain Stimulation”

3rd International Brain Stimulation Conference, Vancouver, Canada (2019)
“Workshop 1:Center and At-Home Methods of tDCS”(2019)
“Neuromodulation devices with low intensity electric fields.”

Bioelectronic Medicine Forum (2019)
Panel discussion "New Devices Up Our Sleeve: Neuromodulation Gets Personal"
GlaxoSmithKline (2019)
“An introduction to Neuromodulation technologies and science.”

X (2019)
“Neurotechnology.”

Joint Meeting: Neuromodulation the Science, NYC Neuromodulation (2019)
“New Engineering of Neuromodulation & Brain Machine Interfaces.”

Rochester Neuromodulation Symposium (2019)
“The targeting limits of transcranial electrical stimulation”.

Case Western Reserve University (2019)
“Neuromodulation through BBB stimulation or Heating: New Mechanisms of DBS, SCS, and tDCS”

Minnesota Neuromodulation symposium (2020)
“How brain state change response to neuromodulation: Oscillations, connectivity, and plasticity” POSTPONED COVID-19

7th International Conference on Non-Invasive Brain Stimulation, Germany (2020).Plenary
“What do tDCS, tACS, Temporal Interference Stimulation, and ECT have in common?”

7th International Conference on Non-Invasive Brain Stimulation, Germany (2020).
“High-resolution modeling and large-animal validation of transcutaneous direct current stimulation of neurorehabilitation?”

National Center of Neuromodulation for Rehabilitation MUSC Advanced taVNS Symposium (2020)
“Modeling of Brain and Cranial Nerve Activation”

Bioelectronic Medicine Forum (2020)
“New Treatment Modalities”

3rd International Neuroergonomics Conference, Germany, Munich, Germany (2020)
“Can Neuromodulation Make Us Better: Changing Brain Activity with Wearable Brain Stimulation Devices” POSTPONED COVID-19

BioKorea (2020) Online
“High-Definition Transcranial Direct Current Stimulation (HD-tDCS) : Low-power, Targeted, and Non-invasive Electroceuticals for CNS diseases”

BrainBox (2020) Online
“The targeting limits of transcranial electrical stimulation”.

MSRI Workshop for Clinical Translation of Implantable Devices (2020) Online
“Translating non-invasive brain stimulation inventions: academic and industry partnerships.”

Academy of Aphasia (2020) Online
NIH Keynote “transcranial Direct Current Stimulation (tDCS) boosts capacity for plasticity.”

Johnson and Johnson JLABS (2020)
“An introduction to Neuromodulation and 2 big disruptions”

Neurotech Leaders Forum (2020)
Panel: Repelling the Invasion: Surface Stimulation Makes a Comeback

Johns Hopkins, Translational Neuroengineering Technologies Network (2020)
“The Ins and Outs of Direct Current Stimulation”

XII International Symposium on Neuromodulation (2020)
“What tDCS, tACS, Temporal Interference Stimulation, and ECT have in common.”

Engineering principles of SCS and DBS: Foundations, industry updates, and emerging concepts (2021)

“Neurostimulation fundamentals: Dose, current flow, and neural activation”
Advances in Translational Direct Current Stimulation in Psychiatric Disorders (2021)
“Best practices and latest developments in tDCS”
Justus Liebig University (2021)
“Technology and fundamentals of tACS.”
5th INTF webinars - Individually Optimized Non-Invasive Brain Stimulation (2021)
“Closed-loop Stimulation: Why Bother”
International Conference on Neurosciences and Rehabilitation (2021)
“Non-invasive neuromodulation in the post COVID-19 world”
International Conference on Neurosciences and Rehabilitation (2021) - workshop
Transcranial Direct Current Stimulation (tDCS): Advanced Theory and Practical Demonstration
ASRC Sensor Center for Advanced Technology Virtual Roadshow (2021)
Panelist
Neuroergonomics Conference (2021)
“Can Neuromodulation Make Us Better: Changing Brain Activity with Wearable Brain Stimulation Devices”
Neuroergonomics Conference (2021) workshop
“Introduction to practical methods in low-intensity transcranial Electrical Stimulation”
Penn Brain Science, Translation, Innovation, and Modulation (brainSTIM) Center (2021)
““tDCS for neuropsychiatric post-acute sequelae SARS-CoV-2 infection (PASC) and as a general tool to boost brain vascular function and clearance mechanisms”
XII International Symposium of Neuromodulation (2021)
“transcranial Direct Current Stimulation changes Brain Vasculature”
4th International Brain Stimulation Conference (2021)
“History and recent advancements and changes in computational modeling methods for transcranial electrical stimulation.”
4th International Brain Stimulation Conference (2021)
“Workshop 1:Center and At-Home Methods of tDCS”
4th International Brain Stimulation Conference (2021)
Plenary: tDCS news: COVID-19 and PASC treatment, Neuro-vascular modulation, and Games”
Cardiff University (2021)
“Technology and science of transcranial Direct Current Stimulation (tDCS): How to boost brain function and capacity for plasticity.”
International Neuromodulation Society's (INS) 15th World Congress (2022), Barcelona
Neurovascular-modulation: A New Mechanistic Paradigm Linking Diverse Invasive and Non-invasive Brain Stimulation Approaches
International Neuromodulation Society's (INS) 15th World Congress (2022), Barcelona
Neuromodulation Devices for Managing COVID-19 Sequelae
American Association for the Advancement of Science (AAAS) Annual Meeting (2022)
Direct Current Stimulation Enhances Plasticity: Implications for Language and Aphasia
North American Neuromodulation Society (2022). Pre-meeting ‘Engineering Principles of DBS and SCS in Clinical Practice’ (Pre-meeting co-Chair)
“Neurostimulation fundamentals: Dose, current flow, and neural activation”
International Federation of Clinical Neurophysiology (2022) Geneva
““Neurovascular-modulation: How brain stimulation techniques like tDCS, TMS and ECT may activate the blood-brain-barrier?”
Northeast Bioengineering Conference (2022)
“Wearable Neuromodulation for (Long) Covid and Neuro-vascular Modulation”
Bioelectronic Medicine Forum (2022)
New Technologies in Bioelectronic Medicine, panel

National Center of Neuromodulation for Rehabilitation, NC-NM4R (2022)
Workshop on transcranial electrical stimulation at MUSC
Mount Sinai, Friedman Brain Institute, Translational Neuroscience Seminar (2022)
“tDCS for (Long) Covid and Neuro-vascular Modulation”
Carnegie Mellon University, Neural Engineering Seminars (2022)
“Wearable non-invasive brain stimulation as a tool to boost brain vascular function and clearance mechanisms.”
Boston University, Engineering the Brain for Discovery and Clinical Applications (2022)
“Neurovascular-modulation and how a wearable brain stimulation might treat brain disorders from age-related cognitive decline to long-COVID”
International Network of tES fMRI (INTF) Webinar Series 6th Webinar (2022)
“Core Talk 1: Notes on the limits of electric field sensitivity”
International Network of tES fMRI (INTF) Webinar Series 7th Webinar (2022)
“Opening Talk 2: Origins of specificity in brain stimulation studies”
Gordon Center for Medical Imaging, Massachusetts General Hospital, Harvard Medical School (2022)
“Neurovascular-modulation: A new mechanism paradigm for neuromodulation that is actually not really news”
International Symposium of Neuromodulation (2022)
“The creation of High-Definition transcranial Electrical Stimulation: From concept, to testing, to product.”
International Neuromodulation Society (INS) 2022 interim meeting (Mumbai, India).
“tDCS for COVID and Long-COVID”
International Neuromodulation Society (INS) 2022 interim meeting (Mumbai, India).
“Evoked Synaptic Excitatory Potentials (ESAPs): Origins and implications for Spinal Cord Stimulation”
International Neuromodulation Society (INS) 2022 interim meeting (Mumbai, India).
“Neurovascular Modulation: A New Mechanistic Paradigm Linking Diverse Invasive and Non-Invasive Brain Stimulation Approaches.”
North American Neuromodulation Society (2023). Pre-meeting ‘Engineering Principles of DBS and SCS in Clinical Practice’ (Pre-meeting co-Chair)
“Neurostimulation fundamentals: Dose, current flow, and neural activation”
North American Neuromodulation Society (2023)
“SCS: Synaptic Evoked Potentials”
North American Neuromodulation Society (2023)
“SCS: Neurovascular modulation and heating”
49th Northeast Bioengineering Conference (2023)
“Functional neuroimaging as the key to effective neurostimulation: Neuro-vascular Modulation?”
Bioelectronic Medicine Forum (2023)
“Biomarkers Close the Loop in Bioelectronic Medicine”
Spark Biomedical (2023)
“A new framework for using biomarkers to optimize and personalize neuromodulation.”
NAPA Pain, Neuromodulation The Science (NTS) (2023)
“Neuromodulation Techniques and Innovations: A Primer for Healthcare Providers”
Electroneuro, Rio De Janeiro, Brazil (2023)
“Optimizing brain targeting with High-Definition tDCS”
Brain and Human Body Modeling Conference, Martinos Center (2023)
“Neuro-vascular Modulation: what a new mechanism suggests about how brain stimulation works and how to interpret hemodynamic imaging”
Targeting Variability in Transcranial Stimulation Research 2023 (Munich, Germany)
“Categorizing biomarkers for personalized neuromodulation.”
Louisiana State University at Baton Rouge Psychiatry Grand Rounds, 2023

"A simple introduction to how neuromodulation devices work."
Medtronic (2023)
"Neuromodulation Design and Biomarkers."
International Neuromodulation Society, Vancouver (2024)
"Neurovascular Modulation: Is the Direct Stimulation of Brain Vasculature as a Therapeutic Mechanism?"
International Neuromodulation Society, Vancouver (2024)
"Sub-Threshold Neuromodulation: Everything Old is New"
International Neuromodulation Society, Vancouver (2024)
"Do we need to understand mechanisms to invent the next breakthrough"
ANT Neuromeeting, Philadelphia (2024)
"Biomakers in closed-loop neuromodulation: What are they good for"
III Symposium on Innovation and Translational Neuroscience and XVI International Symposium on Neuromodulation, Sao Paulo/Online (2024)
"Closing the loop between brain and electrical stimulation: towards precision neuromodulation treatments."

Consulting / Technology Transfer:

EXPERT REPORTS/CONTRACTS:

(Utility / Government -excluding reviewing)

NASA Johnson Space Center: International Space Station EVA shock hazard 2008
subcontract through *Wyle Integrated Science and Engineering*
Jersey Central Power & Light Company, subsidiary of *FirstEnergy Corporation* 2005-07
"Hazards associated with exposure to ultra-low voltages."
Consolidated Edison of New York, 2004 "A review of hazards associated with exposure to low voltages" submitted to the *New York State Public Service Commission*

(Device Industry, selected)

Elsevier (Brain Stimulation), Journal editor
Medical University of South Carolina, Related to neuromodulation device
Wise, Related to electrode
Zabara Family Foundation, Related to neuromodulation
(Joy) Corundum Neuroscience, related to medical device
Lumenis, Related to technology
Ybrain, Related to medical technology
Ceragem, Ceragem Clinical, Related to device
Apple, Related to technology
Google (X), Related to technology
Allergan, Related to medical device
Remz, Related to neuromodulation device
iLumen, Related to medical device
Biovisics, Related to medical device
Emoji, Related to human factors
Synopsis (Simpleware), related to models
MECTA, Related to medical device
QEY, Related to a device
QEY-Med, Related to a device
Halo Neuro, member Scientific Advisory Board
GlaxoSmithKline, Related to medical therapies, Scientific Advisory Board
Neuroenhancement Lab, Related to stimulation product

TriStar, Related to a consumer product with electrical stimulation
Electrocore, Related to brain stimulation technology
NuCalm Inc., Related to neuromodulation system
Boston Scientific Corp., Relating to neuromodulation, member Scientific Advisory Board
Medtronic Inc., Physician Sponsored Agreement relating to DBS system
Biophan Technologies. IP analysis related to MRI compatible implants
NevroCorp, Technical analysis relating to SCS system
Ion Channel Innovations, Gene therapy bio-sensor device
Boston Scientific Corp., Relating to biological fluid pumps
Memorial Sloan Kettering Cancer Center, Relating to medical device
Nu Skin, Related to FDA regulation

Litigation support (related technical analysis)

Brown against *The Mount Sinai Medical Center*. Supreme Court of the State of New York
No: 306626/08 including *Laserscope (American Medical Systems Inc.)*
Omand vs. Zabara. Court of Common Pleas of Montgomery County, Pennsylvania No:
84-17202 (*Cyberonics Inc.*)
Smith vs. *Jersey Central Power & Light Company*. Superior Court of New Jersey, Law
Division, Ocean County No: OCN-L-3236-03
Mackey vs Murray. Supreme Court of State of New York, County of Suffolk No. 23026/05
(*Conair Corp.*)
Estate of Tarun Mal et al. vs. Advance et al. (*Intermatic*) United States District Court,
Northern District, OH NO:1:07-CV-02868
Osborn vs. Kiewut Power. (UNITED HYDROGEN OF TENNESSEE, RIVERPORT
INSURANCE COMPANY, AES CORP. INDIANAPOLIS POWER & LIGHT) Circuit
Court of Pike County. Cause No. 63C01-1409-CT-0002227
SUPERIOR COURT OF THE STATE OF CALIFORNIA COUNTY OF LOS ANGELES
DANIEL RICHMOND, et al., vs. SOUTHERN CALIFORNIA EDISON COMPANY, Case No.
BC 497689
UNITED STATES INTERNATIONAL TRADE COMMISSION WASHINGTON, D.C. Matter
of Certain Non-Invasive Aesthetic Body-Contouring Devices, Components Thereof,
and Methods of Using Same (Investigation No. 337-TA-1219) on behalf of Allergan
Limited, Allergan USA, Inc., Allergan, Inc., Zeltiq Aesthetics, Inc., Zeltiq Ireland
Unlimited Company, and Zimmer MedizinSysteme GmbH. [KIRKLAND & ELLIS LLP]
Lumenis Be LTD v. BTL Healthcare Technologies A.S., inter partes review (IPRs) [ROPES
& GRAY LLP]
Boston Scientific Corporation, and Boston Scientific Neuromodulation Corporation vs
Nevro Corporation. C.A No. 1-21-cv-00258-CFC (Akin Grump)
HI-DOW International et al. v. Bryan Wheelock et al.. [Haar & Woods, LLP]
Wave Neuroscience, Inc. v. PeakLogic, Inc, BriainFrequency. et al. UNITED STATES
DISTRICT COURT SOUTHERN DISTRICT OF CALIFORNIA. CASE NO.:
3:21-cv-01330-CAB-AGS (BUCKALTER).
Serendia vs X. (LATHAM & WATKINS LLP)
Aerin Medical and The Foundry vs Neurent Medical C.A. No. 23-756 (GBW)
(D. Del.). (Finnegan, Henderson, Farabow, Garrett & Dunner), Inter partes review
(IPRs)

INTELLECTUAL PROPERTY: (From >50, redacted)

U.S. Patent Application No. 18/331,638 "ENGAGEMENT COMPONENT SELECTION FOR CONTROL OF BIO-PSYCHIATRIC THERAPEUTIC TRAJECTORY (BTT)"
United States Patent 8,494,627 "Neurocranial electrostimulation models, systems, devices, and methods" City University of New York. 2013
United States Patent #Pending "Apparatus and Method for Neurocranial Electrostimulation" City University of New York 2013
United States Patent Application "Wireless pulse oximetry." MSKCC / RF-CUNY
United States Patent Application "Method to reduce heating at Implantable medical devices including neuroprosthetic devices." RF-CUNY
United States Patent Application "Apparatus and method for focal transcranial electrostimulation". RF-CUNY
PCT International Patent Application "Transcranial Stimulation Models with acoustic integration" RF-CUNY
United States Patent Application "Method and device for combining light and electrical stimulation". RF-CUNY
United States Patent Application "Brain stimulation device". RF-CUNY
PCT International Patent Application "Method for reducing discomfort during electrostimulation, and compositions and apparatus therfor." RF-CUNY
PCT International Patent Application "Transcranial Stimulation" RF-CUNY
PCT International Application "Neurocranial electrostimulation models, systems, devices, and methods" RF-CUNY
US Patent "Neurocranial Electrostimulation Models, Systems, Devices, and Methods."
Mexican Patent Office #302290 "Method for reducing discomfort during electrostimulation, and compositions and apparatus." (August 13, 2012)
United States Patent Application "Brain stimulation device and methods". RF-CUNY
United States Patent Application "Method for portable brain stimulation". RF-CUNY
Australian Patent "Method for reducing discomfort during electrostimulation, and compositions and apparatus therfor." RF-CUNY (August 20, 2013) 2009334503 application number.
United States Patent Application "Dry electrode for tDCS". RF-CUNY
PCT International Patent Application "Method for neuromodulation using tongue electrode". RF-CUNY
United States Patent Application "Systems and Methods for Thermal Stimulation of the Spinal Cord" Boston Scientific Neuromodulation Corporation

Selected News/Features

Preferred Health Magazine "SAFE TODDLES: A Wearable Cane Designed to Assist Visually Impaired Toddlers in Learning to Walk" 2024
<https://www.preferredhealthmagazine.com/beltcaneforkids>

NIH. "NIH launches long COVID clinical trials through RECOVER Initiative, opening enrollment". July 31, 2023.
<https://www.nih.gov/news-events/news-releases/nih-launches-long-covid-clinical-trials-through-recover-initiative-opening-enrollment>

Reuters "US NIH launches long-COVID trials of Pfizer's Paxlovid, other therapies" July 31, 2023
<https://www.reuters.com/business/healthcare-pharmaceuticals/us-nih-launches-long-covid-trials-pfizers-paxlovid-other-therapies-2023-07-31/>

Medical New Today "Could transcranial stimulation reduce brain damage after a stroke?" June 28, 2023

<https://www.medicalnewstoday.com/articles/could-transcranial-stimulation-reduce-brain-damage-after-a-stroke>

Medscape "Noninvasive Brain Stimulation Promising for Acute Stroke" June 30, 2023
<https://www.medscape.com/viewarticle/993908>

2-Minute Medicine "High-definition cathodal direct current stimulation for treatment of acute ischemic stroke". June 29, 2023
<https://www.2minutemedicine.com/high-definition-cathodal-direct-current-stimulation-for-treatment-of-acute-ischemic-stroke/>

Medical Daily "Highly Targeted Electrical Brain Stimulation May Improve Blood Flow In Stroke Patients: Study" June 22, 2023
<https://www.medicaldaily.com/highly-targeted-electrical-brain-stimulation-may-improve-blood-flow-in-stroke-patients-study-470243>
[Highly Targeted Electrical Brain Stimulation May Improve Blood Flow In Stroke Patients: Study](#)
Medical Xpress "Brain stimulation may prove helpful to acute stroke patients, pilot study suggests" June 21, 2023 <https://medicalxpress.com/news/2023-06-brain-acute-patients.html>

Newsy "Breakthrough Device Could Ease Deep Depression" Sept 23, 2022
<https://www.youtube.com/watch?v=1f0zbXq5EH0>

MIT Tech Review "Brain stimulation can improve the memory of older people"
<https://www.technologyreview.com/2022/08/22/1058360/brain-stimulation-memory-older-people/>
August 22, 2022.
(*The article centers on a Nature Neuroscience publication Reinhart et al using HD-tACS can boost memory in older adults. HD-tACS was co-invented by Dr. Bikson. The Reinhart study, made possible by HD-tACS also featured in NBC*)
<https://www.nbcnews.com/health/health-news/brain-zapping-cap-appears-boost-memory-least-1-month-early-research-fi-rchna43949>, BBC <https://www.bbc.com/news/health-62606510>, the Wall Street Journal
<https://www.wsj.com/articles/electrical-brain-stimulation-improves-memory-new-study-shows-11661180400>, and others.)

NeuroNews. "Neuromodulation offers hope for patients with long-COVID". June 22, 2022.
<https://neuronewsinternational.com/neuromodulation-offers-hope-for-patients-with-long-covid/>

BoingBoing "Scientists want to treat Long Covid by zapping the brain with electricity" Jan 11, 2022
<https://boingboing.net/2022/01/11/scientists-want-to-treat-long-covid-by-zapping-the-brain-with-electricity.html>

IEEE Spectrum. Zapping the Brain and Nerves Could Treat Long COVID Jan 5, 2021
<https://spectrum.ieee.org/long-covid-neurostimulation>

Funding Allows Safe Toddlers To Study Benefits Of Safe Mobility Device For Blind Toddlers. Oct. 6, 2021.
<https://www.wwnytv.com/prnewswire/2021/10/07/funding-allows-safe-toddlers-study-benefits-safe-mobility-device-blind-toddlers/>

https://www.wfmz.com/news/pr_newswire/pr_newswire_health/funding-allows-safe-toddlers-to-study-benefits-of-safe-mobility-device-for-blind-toddlers/article_b6df3622-c99c-5802-aeb0-aa13b8448ae0.html

CBS New York, April 22, 2021

<https://newyork.cbslocal.com/2021/04/23/jorge-alcantarez-toddler-cane/>

Neural Impact Podcast 2021 May 3, 2021

<https://neurimplantpodcast.com/prof-marom-bikson-discusses-his-work-with-transcranial-direct-current-simulation>

Marom Bikson's CCNY team explores new treatment for NeuroCOVID. March 2, 2021

<https://www.ccny.cuny.edu/news/marom-biksons-ccny-team-explores-new-treatment-neurocovid>

Mass Device "Soterix wins IDE for depression treatment trial" July 7, 2020

<https://www.massdevice.com/soterix-wins-ide-for-depression-treatment-trial/>

Yahoo Finance "FDA Grants Soterix Medical IDE Approval for Home-based tDCS-LTE Trial for Depression" July 7, 2020

<https://finance.yahoo.com/news/fda-grants-soterix-medical-ide-170600430.html>

Freethink "Treating Depression at Home with a tDCS Headset" April 19, 2020

<https://www.freethink.com/articles/t�dc-device-depression>

Brazilian TV "Estimulação cerebral atrai atletas profissionais e amador". Jan 16, 2020

https://www.youtube.com/watch?v=SIjkJej0m7w&feature=youtu.be&fbclid=IwAR1yNg_5BYKzvMLQt4jiCbibLF1QHH5TEmVoDf4fAJpxXIGV9fa3lwCx6MA

KSHB Kansas City "Visually impaired students ask others to see them"

<https://www.kshb.com/news/local-news/visually-impaired-students-ask-others-to-see-them> Oct 25, 2019

Behind the Bench <https://www.neurotechbench.com/post/marom-bikson-is-making-an-impact> Oct 10, 2019

Nature BioTechnology "The Brain Hackers" Aug 2019

<https://www.nature.com/articles/s41587-019-0238-4>

Neurology Today "A New Study Suggests Non-Invasive Brain Stimulation Can Improve Working Memory" May 23, 2019

https://journals.lww.com/neurotodayonline/Fulltext/2019/05230/A_New_Study_Suggests_Non_Invasive_Brain.6.aspx

NPR "Scientists Test Whether Brain Stimulation Could Help Sharpen Aging Memory" April 8, 2019

<https://www.npr.org/sections/health-shots/2019/04/08/711010354/scientists-test-whether-brain-stimulation-could-help-sharpen-aging-memory>

Patient Daily. "New technologies can treat anxiety, depression through at-home brain stimulation". March 11, 2019.

<https://patientdaily.com/stories/512225344-new-technologies-can-treat-anxiety-depression-through-at-home-brain-stimulation>

Quartz. "The best brain hack for learning faster is one you already know". Feb 21, 2019

<https://qz.com/1538407/learning-faster-might-be-possible-with-this-wearable-headset/>

IEEE Spectrum "Researcher Offers an Answer to Scientific Controversy Over Brain Stimulation" Feb 1, 2019

<https://spectrum.ieee.org/the-human-os/biomedical/devices/researcher-offers-answer-to-scientific-controversy-over-brain-stimulation>

MD Magazine Transcranial Stimulation at Home Reduces Fatigue in Multiple Sclerosis
<https://www.mdmag.com/medical-news/transcranial-stimulation-at-home-reduces-fatigue-multiple-sclerosis>

Daily Beast "Flow Neuroscience Advertises Pumping Electricity Into Your Own Brain at Home. Should You Do It?" Dec 2, 2018
<https://www.thedailybeast.com/flow-neuroscience-advertises-doing-electroshock-therapy-on-yourself-at-home-should-you-do-it>

The Economist and Slate. "The Body Electric", episode 2 of The Secret History of the Future" Sept 12, 2018. <https://itunes.apple.com/us/podcast/the-secret-history-of-the-future/id1422830638?mt=2>

Using new therapies to teach critical skills. September 2018.
<http://academicdepartments.musc.edu/newscenter/2018/vagus-nerve-stimulation-premature-babies/index.html>

Science Daily March 27, 2018 <https://www.sciencedaily.com/releases/2018/03/180327162610.htm>

WSET Special cane allows local girl, who is blind, to conquer anything she wants July 24, 2018
<http://wset.com/news/local/special-cane-allows-local-girl-who-is-blind-to-conquer-anything-she-wants>

WBDJ Amherst County girl who is blind learning to walk with the help of a new cane just for toddlers July 23, 2018
<http://www.wdbj7.com/content/news/Amherst-County-toddler-who-is-blind-learning-to-walk-with-the-help-of-a-new-cane-just-for-toddlers-488960281.html>

Summer 2018 Issue of PRISM from the American Society of Engineering Educators (ASEE). section titled "Breakthroughs and trends in the World of Technology" by the magazine Prism of the American Society of Engineering Educators (ASEE). <http://www.asee-prism.org/first-look-sum-4/>

CUNY TV: Study with the Best - Season Finale. June 1, 2018 (Original tape date); June 28, 2018 (First aired)
<http://www.cuny.tv/show/studywiththebest/PR2007396>

CUNY TV This month on Science & UI! Every toddler is afraid of letting go when taking their first steps. Now imagine a toddler who is visually impaired. Grace Ambrose-Zaken and Marom Bikson are the inventors of a new device that is helping visually-impaired toddlers reach their milestones. May 24, 2018. (Original tape date); June 6, 2018.(First aired) https://youtu.be/ojh_XPi2Rjo?t=1126

Crain's New York A way forward for toddlers with poor eyesight April 11, 2018
http://www.craignewyork.com/article/20180411/PHOTOFINISH/180419985/photo-finish-a-way-forward-for-toddlers-with-poor-eyesight#utm_medium=email&utm_source=cnyb-morning10&utm_campaign=cnyb-morning10-20180411

CBS (National) Toddler Cane helps visually impaired toddlers April 6, 2018
<https://www.cbsnews.com/live/video/20180406194656-toddler-cane-device-helps-visually-impaired-babies-walk-and-move/>

CBS Philly New Device Allows Visually Impaired Toddlers To Move With Ease. April 6, 2018
<http://philadelphia.cbslocal.com/2018/04/06/visually-impaired-toddlers-device/>

CBS New York. Toddler Cane Giving Confidence To Children Who Cannot See Their World. March 29, 2018 <http://newyork.cbslocal.com/2018/03/29/toddler-cane/>

Detection of transcranial direct current stimulation deep in the living human brain. March 27, 2018
https://www.eurekalert.org/pub_releases/2018-03/muos-dot032718.php

Students are zapping their brains to get ahead in school — but evidence for the practice is limited. Feb 21, 2018
<http://hechingerreport.org/students-zapping-brains-get-ahead-school-evidence-practice-limited/>

Brain Stimulation Is All the Rage--but It May Not Stimulate the Brain Feb 5, 2018
<https://www.scientificamerican.com/article/brain-stimulation-is-all-the-rage-but-it-may-not-stimulate-the-brain/>

LifeHacker. The Truth about Electrical Brain Stimulation. Jan 17, 2018
<https://vitals.lifehacker.com/the-truth-about-electrical-brain-stimulation-1822192429>

US News. Can Transcranial Magnetic Stimulation Help With Depression? Nov 17, 2017.
<https://health.usnews.com/health-care/patient-advice/articles/2017-11-17/can-transcranial-magnetic-stimulation-help-with-depression>

Nordic Business Insider Oct 23, 2017 A Swedish startup wants to end the use of antidepressants with a head-mounted wearable
<http://nordic.businessinsider.com/a-swedish-startup-wants-to-kill-antidepressants-with-a-head-mounted-wearable-2017-10>

Newsweek Oct 15, 2017 DARPA SCIENTISTS UNVEIL BRAIN DEVICE THAT BOOSTS LEARNING BY 40 PERCENT
<http://www.newsweek.com/darpa-device-boosts-learning-brain-connections-692693>

Market Insider Oct 2, 2017. Transcranial Direct Current Stimulation Shown to Reduce Fatigue Associated with Multiple Sclerosis
<http://markets.businessinsider.com/news/stocks/Transcranial-Direct-Current-Stimulation-Shown-to-Reduce-Fatigue-Associated-with-Multiple-Sclerosis-1002918445>

Quartz Sept 24, 2017 “Brain zapping” could be the best way to treat depression and spark creativity
<https://qz.com/1066338/electric-brain-stimulation-and-creativity-interview-with-an-expert-on-transcranial-direct-current-stimulation-tcds-one-of-the-worlds-leading-researchers-in-electric-brain-stimulation/>

KQED / NPR May 8, 2017 The SF Giants Are Zapping Their Brains With Electricity. Will It Help?
<https://ww2.kqed.org/futureofyou/2017/05/05/san-francisco-giants-brain-electricity/>

IBM thinkLeaders May 4, 2017. Neurostimulation Could Optimize Our Brains — If It Can Overcome the Stigma.
<https://www.ibm.com/blogs/think-leaders/new-thinking/neurostimulation-optimize-brains-can-overcome-stigma/>

HBO Vice News. March 30, 2017

<https://news.vice.com/story/people-are-zapping-their-brains-with-electricity-hoping-to-enhance-creativity-and-intelligence>

Scientists, entrepreneurs in Chicago area tackle 'brain hacking' Chicago Tribune. March 3, 2017.
<http://www.chicagotribune.com/lifestyles/health/ct-electric-brain-stimulation-met-20170303-story.html>

Brain-Hackers Vie to Enhance Human Performance. Wall Street Journal. Feb 24, 2017

<https://www.wsj.com/articles/brain-hackers-vie-to-enhance-human-performance-1487939402>

Zapping Your Brain at Home to Cure Fatigue. The Atlantic. Feb 22, 2017.

<https://www.theatlantic.com/health/archive/2017/02/zapping-your-brain-at-home-to-cure-fatigue/516972/> (also mentioned on Mass Device

<http://www.massdevice.com/study-tdcs-paired-cognitive-video-game-training-can-help-ms-patients/>)

Do DIY Brain-Booster Devices Work? Scientific American. Jan 10, 2017

<https://www.scientificamerican.com/article/do-diy-brain-booster-devices-work/>

Zapping the brain really does seem to improve depression, New Scientist. Jan 9, 2017

<https://www.newscientist.com/article/2117398-zapping-the-brain-really-does-seem-to-improve-depression/>

Study is 1st to quantify 'brain hacking' tDCS fields. Oct 4, 2016 MASS Device

<http://www.massdevice.com/study-1st-quantify-brain-hacking-tdcs-fields/>

Olympic Athletes Are Electrifying Their Brains, and You Can Too. IEEE Spectrum. Aug 23, 2016.

<http://spectrum.ieee.org/biomedical/bionics/olympic-athletes-are-electrifying-their-brains-and-you-can-too>

Thor's Performance Enhancing Drug of Choice. Inverse Aug 17, 2016

<https://www.inverse.com/science/kendall-squared-biotech-bankruptcies/>

Cadaver study casts doubts on how zapping brain may boost mood, relieve pain. April 20, 2016.

<http://www.sciencemag.org/news/2016/04/cadaver-study-casts-doubts-how-zapping-brain-may-boost-mood-relieve-pain>

Brain-stimulation devices promise to make you a better you - but is there a risk? March 30, 2016

South China Morning Post

<http://www.scmp.com/news/world/article/1931738/brain-stimulation-devices-promise-make-you-better-you-there-risk>

Medium Bright. "Can Small Doses of Electricity Make you Smarter" April 1, 2016

<https://medium.com/bright/can-small-doses-of-electricity-make-you-smarter-86c9a909f465#.b2dds3z8z>

New Scientist. "Brain-shocking therapy may work by boosting calcium in the brain" March 29, 2016

<https://www.newscientist.com/article/2082420-brain-shocking-therapy-may-work-by-boosting-calcium-in-the-brain/>

Washington Post. "Brain-zapping gadgets promise to make you a better you — smarter, stronger, even happier" March 29, 2016

<https://www.washingtonpost.com/news/to-your-health/wp/2016/03/29/brain-zapping-gadgets-promise-to-make-you-a-better-you-smarter-stronger-even-happier/>

“Brain Stimulation Could Speed Stroke Recovery”. Live Science.

<http://www.livescience.com/54071-brain-stimulation-speeds-stroke-recovery.html> March 26, 2016

“DANIEL CHAO WANTS TO ELECTRIFY YOUR BRAIN”. Ozy.

<http://www.ozy.com/rising-stars/daniel-chao-wants-to-electrify-your-brain/67757> March 21, 2016

Brain-Zapping Headphones Could Make You a Better Athlete. MIT Technology Review.

<https://www.technologyreview.com/s/601054/brain-zapping-headphones-could-make-you-a-better-athlete/> March 21, 2016

“Neurostimulation Bright Sparks” Nature.

http://www.nature.com/nature/journal/v531/n7592_supp/full/531S6a.html March 2, 2016

The Hearty Soul “HOW ELECTROCEUTICALS COULD LITERALLY ZAP AWAY DEPRESSION”

<http://theheartysoul.com/how-electroceuticals-could-literally-zap-away-depression/> Jan 13, 2016

ASEE PRISM “Circuit Breakers” Oct 1, 2015 <http://www.asee-prism.org/?s=breakers>

New Scientist “Brain zaps could boost our minds when computers see us flagging” Nov 18, 2015
<https://www.newscientist.com/article/mg22830482-600-brain-zaps-could-boost-our-minds-when-computers-see-us-flagging/>

Wall Street Journal “The Weird World of Brain Hacking” Nov 9, 2015

http://www.wsj.com/article_email/the-weird-world-of-brain-hacking-1447096569-IMQjAxMTA1NDExMTIxNDE1Wj

National Pain Report. Have You Tried to Zap Fibromyalgia Pain Away? Oct 31, 2015

<http://nationalpainreport.com/have-you-tried-to-zap-fibromyalgia-pain-away-8827926.html>

Neurology Advisor. Transcranial Direct Current Stimulation May Reduce Fibromyalgia Pain. Oct 31, 2015 <http://nationalpainreport.com/have-you-tried-to-zap-fibromyalgia-pain-away-8827926.html>

SmartHealth Interview with Marom Bikson Oct 21, 2015

<http://www.smartandhealth.com/index.php/english/97-english/327-interview-with-marom-bikson>

CBC Radio The Current Oct 13, 2015 Electrical brain stimulation moves from lab to home, experts wary

<http://www.cbc.ca/radio/thecurrent/the-current-for-october-13-2015-1.3268141/electrical-brain-stimulation-moves-from-lab-to-home-experts-wary-1.3268160>

SmartCity Business Institute Oct 21, 2015

<http://www.smartcbi.org/index.php/news/20-smart-health/655-interview-with-marom-bikson>

New Statesman. Hacking the brain: can DIY neuroscience make you happier – and smarter? July 2, 2015

<http://www.newstatesman.com/lifestyle/2015/07/hacking-brain-can-diy-neuroscience-make-you-happier-and-smarter>

La Vanguardia. Feature on Marom Bikson. June 10, 2015

<http://www.lavanguardia.com/lacontra/20150610/54432725995/la-contra-marom-bikson.html>

Helmets thought reading can be generalized in a decade. 20 minutos.

<http://www.20minutos.es/noticia/2446210/0/congreso-neurociencia/cascos-pensamiento/aplicaciones-terapeuticas/>

Power on the Brain. Dagens Naeringsliv (Norwegian) June 8, 2015

<http://www.dn.no/d2/2015/08/06/2125/Teknologi/strm-p-hjernen>

Helmets that "read" thoughts, technology could be ready in a decade. Vanguardia. May 3, 2015

<http://www.vanguardia.com.mx/cascosqueenpensamientostecnologiacuepodriaestarlistanunadecada-2314609.html>

How a new gadget divides brain science. April 25, 2015

<https://decorrespondent.nl/2751/Hoe-een-nieuwe-gadget-de-breinwetenschap-verdeelt/289259603325-134d742f>

Suppressing Brain 'Filter' Improves Creative Tasks March 15, 2015 BioScience Technology

<http://www.biosciencetechnology.com/news/2013/03/suppressing-brain-filter-improves-creative-tasks>

Electroceuticals: the Shocking Future of Brain Zapping. Motherboard March 10, 2015

<http://motherboard.vice.com/read/electroceuticals-the-shocking-future-of-brain-zapping>

Smartphone-connected device to counter stress and change mood Feb 18, 2015 The TeCake

<http://www.tecake.com/smartphone-connected-device-counter-stress-change-mood/4973/>

In Search of Serenity: I Strapped a Mood-Changing Device to My Skull NBC News Jan 8, 2015

<http://www.nbcnews.com/storyline/ces-2015/10-second-pitch-most-fun-futuristic-gadgets-ces-n281791>

I tried a brain-altering wearable that allows users to change their moods on demand. Quartz Jan 12, 2014 <http://qz.com/325070/this-brain-altering-wearable-could-end-our-dependence-on-drugs/>

THREE BODY HACKS YOU SHOULDN'T TRY AT HOME. Popular Science Jan 22, 2015

<http://www.popsci.com/three-body-hacks-you-shouldnt-try-home>

Brain Stimulation Devices Prepare to Go Mainstream Dec 12, 2014

<http://www.nbcphiladelphia.com/news/local/Brain-Stimulation-Devices-Prepare-to-Go-Mainstream-285600841.html>

With batteries included, brain stimulation devices prepare to go mainstream. Dec 11, 2014. The Pulse / WHYY

http://www.newsworks.org/index.php/homepage-feature/item/76074-with-batteries-included-brain-stimulation-devices-prepare-to-go-mainstream?linktype=hp_impact

A mood-changing headset, Thync, that uses electrodes to perk you up. The Guardian. Dec 7, 2014

http://www.theguardian.com/technology/2014/dec/07/20-innovations-mood-changing-thync-headset-electrodes?CMP=share_btn_tw

USA Today "Want to feel calm or energized? Thync has an app for that." Dec 1, 2014

<http://www.usatoday.com/story/tech/columnist/shinal/2014/12/01/thync-neuroscientists-start-up-john-shinal-new-tech-economy/70057320/>

The Sunday Times (UK) "Hack My Brain: Plug in and charge your mood"

Zap out of it! 'Shocking' headset uses electrical impulses and an app to boost your mood and banish tiredness. Daly Mail (UK) Nov 12, 2014
<http://www.dailymail.co.uk/sciencetech/article-2830457/Zap-Shocking-headset-uses-electrical-impulses-app-boost-mood-banish-tiredness.html>

Device Changes Your Mood with a Zap to the Head. MIT Technology Review November 10, 2014
<http://www.technologyreview.com/news/532321/device-changes-your-mood-with-a-zap-to-the-head/>

Mente & Cervello (Italian Scientific American Mind) Your Electric Pharmacy (co-authored by M Bikson)

Thync Lets You Give Your Mind a Jolt, Oct 8, 2014
<http://www.businessweek.com/articles/2014-10-08/thync-raises-13-million-for-its-brain-stimulating-electrodes>

High Society Radio tDCS for Neurological Disorders <http://newtrashcity.com/?p=622>

Scientific American Mind. Your Electric Pharmacy (co-authored by M Bikson) Nov 2014
<http://www.scientificamerican.com/article/zap-your-brain-to-health-with-an-electrode-cap/>

Al Jazeera America. TechNow: Zapping and Hacking Your Brain, Sept 26, 2015
<https://www.youtube.com/watch?v=hI18aohv-go>

The Atlantic. Prepare to Be Shocked. August 13, 2014
<http://www.theatlantic.com/magazine/archive/2014/09/prepare-to-be-shocked/375072/>

New York Times. This Procedure May Improve Your Brain — and Uncover the Real You. July 17, 2014
<http://op-talk.blogs.nytimes.com/2014/07/17/this-procedure-may-improve-your-brain-and-uncover-the-real-you/>

FrenchTV Electrodes for a Better Brain. May 20, 2014
http://www.francetvinfo.fr/sciences-des-electrodes-pour-un-meilleur-cerveau_594023.html

NPR. Hacking The Brain With Electricity: Don't Try This At Home May 19, 2014
<http://www.npr.org/2014/05/19/312479753/hacking-the-brain-with-electricity-dont-try-this-at-home>

WIRED magazine. The Unfinished Science Behind the New Wave of Electrical Brain Stimulation. May 5, 2014. <http://www.wired.com/2014/05/brain-stimulation-science/>

Al Jazeera America. I want to be your neuroscience experiment, Sept 27, 2015
<http://america.aljazeera.com/articles/2014/9/27/i-want-to-be-yourneuroscienceexperiment.html>

IEEE-Spectrum The Latest DIY Craze: Brain Hacking. March 14, 2014
<http://spectrum.ieee.org/geek-life/reviews/the-latest-diy-craze-brain-hacking>

KQED (NPR/PBS) Is Brain Stimulation a Medicine of the Future? March 3, 2014
<http://blogs.kqed.org/science/audio/is-brain-stimulation-a-medicine-of-the-future/>

Runner's World. Zap Your Brain to Run Faster. February 27, 2013.
<http://www.runnersworld.com/sports-psychology/zap-your-brain-run-faster>

San Francisco Chronicle "Electrical brain stimulation gains ground" Oct 30, 2012
<http://www.sfgate.com/health/article/Electric-brain-stimulation-gains-ground-3994638.php#photo-3661552>

University of Michigan News Service "Migraine patients find pain relief in electrical brain stimulation" Apr 19, 2012
<http://www.ns.umich.edu/new/multimedia/videos/20347-migraine-patients-find-pain-relief-in-electric-al-brain-stimulation>

Softpedia "Electrical Brain Stimulation Quells Migraines Apr 20, 2012
<http://news.softpedia.com/news/Electrical-Brain-Stimulation-Quells-Migraines-265609.shtml>

Nature News "Brain Buzz" April 13, 2011
<http://www.nature.com/news/2011/110413/full/472156a.html>

Mild electrical current found to prevent migraine attacks. GIZMAG
<http://www.gizmag.com/t�cs-migraine-treatment/22359/>

Washington Times "Migraines and depression: Brain pain and emotional pain somehow lined" July 20, 2012

Psychology Today "Thinking Cap Stimulates Insight -Electric thinking cap boosts insight" February 11, 2011

Publications:

378. N. Gebodh, V. Miskovic, S. Laszlo, A. Datta, **M. Bikson** (2024) Frontal HD-tACS Enhances Behavioral and EEG Biomarkers of Vigilance in Continuous Attention Task. Brain Stimulation journal, DOI:<https://doi.org/10.1016/j.brs.2024.05.009>

377. M. Bikson, M. Sharma (2024). A Brief History of Slow Spinal Potentials, Gate Theory of Pain, and Spinal Cord Stimulation. Neuromodulation Technology at the Neural Interface DOI:<https://doi.org/10.1016/j.neurom.2023.12.001>

376. A.F.L. Cavalcante, J.S.C. Brito Holanda, J.O.S. Passos, J.M.P. de Oliveira, E. Morya, A.H. Okano, **M. Bikson**, R. Pegado. (2024). Anodal tDCS over the motor cortex improves pain but not physical function in chronic chikungunya arthritis: Randomized controlled trial, Annals of Physical and Rehabilitation Medicine. 67:4

375. J Douglas Bremner; Asim H Gazi; Tamara P Lambert; Afra Nawar; Anna B Harrison; Justine W Welsh; Viola Vaccarino; Kevin M Walton; Nora Jaquemet; Kellen Mermin-Bunnell; Hewitt Mesfin; Trinity A Gray; Keyatta Ross; Georgia Saks; Nikolina Tomic; Danner Affadzi; **Marom Bikson**; Amit J Shah; Kelly E Dunn; Nicholas A Giordano; Omer T Inan. (2023) Noninvasive Vagal Nerve Stimulation for Opioid Use Disorder. Ann Depress Anxiety. 10(1): 1117.

374. G. Soleimani, J. Joutsa, K. Moussawi, S.H. Siddiqi, R. Kuplicki, **M. Bikson**, M.P. Paulus, M.D. Fox, C.A. Hanlon, H. Ekhtiari. (2023) Converging Evidence for Frontopolar Cortex as a Target for Neuromodulation in Addiction Treatment. American Journal of Psychiatry. <https://doi.org/10.1176/appi.ajp.20221022>

373. Giuseppina Pilloni, Hyein Cho, Tian Esme Tian, Joerg Beringer, **Marom Bikson**, Leigh Charvet. (2023) . Immediate and Differential Response to Emotional Stimuli Associated With Transcranial Direct Current Stimulation for Depression: A Visual-Search Task Pilot Study. *Neuromodulation*. <https://doi.org/10.1016/j.neurom.2023.07.006> in press

372. Carine El Jamal, Ashley Harrie, Annalise Rahman-Filipiak, Alexandru D Iordan, Alexandre F DaSilva, Robert Ploutz-Snyder, Lara Khadr, Michael Vesia, **Marom Bikson**, Benjamin M Hampstead. (2023) Tolerability and blinding of high-definition transcranial direct current stimulation among older adults at intensities of up to 4 mA per electrode. <https://doi.org/10.1016/j.brs.2023.08.025>

371. G. Soleimani, M. A. Nitsche, T. O. Bergmann, F. Towhidkhah, I. R. Violante, R. Lorenz, R. Kuplicki, A. Tsuchiyagaito, B. Mulyana, A. Mayeli, P. Ghobadi-Azbari, M. Mosayebi-Samani, A. Zilverstand, M. P. Paulus, **M. Bikson**, H. Ekhtiari (2023). Closing the loop between brain and electrical stimulation: towards precision neuromodulation treatments. *Translational Psychiatry*, 13, 279(2023). doi: <https://doi.org/10.1038/s41398-023-02565-5>

370. N. Khadka, C. Poon, L. M. Cancel, J. M. Tarbell, **M. Bikson** (2023). Multi-scale multi-physics model of brain interstitial water flux by transcranial Direct Current Stimulation. *Journal of Neural Engineering*, 20(4), 046014. doi: <https://doi.org/10.1088/1741-2552/ace4f4>

369. M. Sabé, A. Sulstarova, C. Chen, J. Hyde, E. Poulet, A. Aleman, J. Downar, V. Brandt, L. Mallet, O. Sentissi, M. A. Nitsche, **M. Bikson**, A. R. Brunoni, S. Cortese, M. Solmi (2023). A century of research on neuromodulation interventions: A scientometric analysis of trends and knowledge maps. *Neuroscience & Biobehavioral Reviews*, 152(2023), 105300. doi: <https://doi.org/10.1016/j.neubiorev.2023.105300>

368. M. Bahr-Hosseini, K. Nael, G. Unal, M. Iacoboni, D. S. Liebeskind, **M Bikson**, J. L. Saver (2023). High-definition Cathodal Direct Current Stimulation for Treatment of Acute Ischemic Stroke: A Randomized Clinical Trial. *JAMA Network Open*, 6(6), 2319231. doi:10.1001/jamanetworkopen.2023.19231

367. **M. Bikson**, J. Giordano (2023). Defining distinction between real vs hypothetical problems in the ethics of neurotechnology. *Brain Stimulation*, 16(3), 977-979. doi: <https://doi.org/10.1016/j.brs.2023.05.016>

366. M. Sharma, V. Bhaskar, L. Yang, M. FallahRad, N. Gebodh, T. Zhang, R. Esteller, J. Martin, **M. Bikson** (2023). Novel evoked synaptic activity potential (ESAPs) elicited by spinal cord stimulation. *eNeuro*, 10(5). doi: <https://doi.org/10.1523/ENEURO.0429-22.2023>

365. G. Pilloni, L. W. Masters, M. Muccio, C. Choi, A. Datta, **M. Bikson**, L. Krupp, Y. Ge, L. Charvet (2023). Is Fatigue Response to tDCS Mediated by Change in Affect? An Open-label tDCS-MRI Study (S27. 010). *Neurology*, 100(17.S2). doi: <https://doi.org/10.1212/WNL.0000000000202970>

364. **M. Bikson**, A. Ganho-Ávila, A. Datta, B. Gillick, M. G. Joensson, S. Kim, J. Kim, A. Kirton, K. Lee, T. Marjenin, B. Onarheim, E. M. Rehn, A. T. Sack, G. Unal (2023). Limited output transcranial electrical stimulation 2023 (LOTES-2023): Updates on engineering principles, regulatory statutes, and industry standards for wellness, over-the-counter, or prescription devices with low risk. *Brain Stimulation*, 16(3), 840-853. doi: <https://doi.org/10.1016/j.brs.2023.05.008>

363. N. R. Rajagopalan, WR. Vista, M. Fujimori, G.P.H. L. Vroomen, J. M. Jiménez, N. Khadka, **M. Bikson**, G. Srimathveeravalli (2023). Cytoskeletal remodeling and gap junction translocation

mediates blood-brain barrier disruption by non-invasive low-voltage pulsed electric fields. *Annals of Biomedical Engineering* (2023), 1-14. doi: <https://doi.org/10.1007/s10439-023-03211-3>

362. G. Unal, C. Poon, M. FallahRad, M. Thahsin, M. Argyelan, **M. Bikson** (2023). Quasi-static pipeline in electroconvulsive therapy computational modeling. *Brain Stimulation*, 16(2), 607-618. doi: <https://doi.org/10.1016/j.brs.2023.03.007>

361. **M. Bikson** (2023). Transcranial direct current stimulation and neurovascular modulation. *European Journal of Neurology*, 30(4), 802-803. doi: <https://doi.org/10.1111/ene.15710>

360. M. Bahr-Hosseini, K. Nael, M. Iacoboni, D. S. Liebeskind, **M. Bikson**, J. L. Saver (2023). Abstract WP36: Transcranial Electrical Stimulation (tDCS) In Stroke Early After Onset Clinical Trial (TESSERACT). *Stroke*, 54(Suppl_1), AWP36-AWP36. doi: https://doi.org/10.1161/str.54.suppl_1.WP36

359. K. Santana, E. França, J. Sato, A. Silva, M. Queiroz, J. Farias, D. Rodriguez, I. Souza, V. Ribeiro, E. Caparelli-Dáquer, A. L. Teixeira, L. Charvet, A. Datta, **M. Bikson**, S. Andrade (2023). Non-invasive brain stimulation for fatigue in post-acute sequelae of SARS-CoV-2 (PASC). *Brain Stimulation*, 16(1), 100-107. doi: <https://doi.org/10.1016/j.brs.2023.01.1672>

358. G. Gaugain, L. Quéguiner, **M. Bikson**, R. Sauleau, M. Zhadobov, J. Modolo, D. Nikolayev (2023). Quasi-static approximation error of electric field analysis for transcranial current stimulation. *Journal of Neural Engineering*, 20(1). doi: <https://doi.org/10.1088/1741-2552/acb14d>

357. G. Unal, C. Poon, M. FallahRad, M. Thahsin, M. Argyelan, **M. Bikson** (2023). Quasi-static assumption in electroconvulsive therapy computational modeling. *Brain Stimulation*, 16(1), 402. doi: <https://doi.org/10.1016/j.brs.2023.01.816>

356. A. Vogel-Eyny, H. Cho, G. Pilloni, A. George, M. Lustberg, A. Datta, **M. Bikson**, K. Nazim, R. E. Charlson, L. Charvet (2023). At-home telehealth transcranial direct current stimulation for treatment resistant depression. *Brain Stimulation*, 16(1), 344. doi: <https://doi.org/10.1016/j.brs.2023.01.658>

355. M. Androulakis, K. Mangold, A. Harrison, R. D. Moore, S. Guo, J. Zhang, A. Datta, **M. Bikson**, L. Charvet (2023). Remotely Supervised tDCS for Persistent Post-Traumatic Headache in Veterans (ReStore). *Brain Stimulation*, 16(1), 278. doi: <https://doi.org/10.1016/j.brs.2023.01.477>

354. M. Bahr-Hosseini, K. Nael, M. Iacoboni, D. Liebeskind, **M. Bikson**, J. Saver (2023). Transcranial Electrical Stimulation in Stroke EaRly After onset Clinical Trial (TESSERACT). *Brain Stimulation*, 16(1), 236. doi: <https://doi.org/10.1016/j.brs.2023.01.358>

353. G. Pilloni, L. Charvet, A. Datta, **M. Bikson** (2023). Potential application of Transcranial Electrical Stimulation (tES) techniques in the context of COVID-19 clinical course: From theory to real-world application. *Brain Stimulation*, 16(1), 192. doi: <https://doi.org/10.1016/j.brs.2023.01.231>

352. S. Andrade, E. França, J. Sato, L. Costa, M. E. Bezerra, E. Caparelli-Dáquer, A. Datta, **M. Bikson** (2023). Modulation of brain-lung interactions using HD-tDCS: Mechanisms, clinical practice, and recent advances. *Brain Stimulation*, 16(1), 114. doi: <https://doi.org/10.1016/j.brs.2023.01.1666>

351. **M. Bikson** (2023). Neuro-vascular modulation and brain response to transcranial electrical stimulation. *Brain Stimulation*, 16(1), 196. doi: <https://doi.org/10.1016/j.brs.2023.01.244>

350. S. Andrade, E. França, C. Silvestre, K. Santana, V. Cintra, J. Sato, E. Caparelli-Dáquer, B. Hampstead, A. Teixeira, **M. Bikson** (2023). tDCS as telehealth intervention to reach patients with Post-Acute Sequelae of SARS-CoV-2 (PASC). *Brain Stimulation*, 16(1), 192-193. doi: <https://doi.org/10.1016/j.brs.2023.01.233>

349. N. Gebodh, V. Miskovic, S. Laszlo, A. Datta, **M. Bikson** (2023). A scalable framework for closed-loop neuromodulation with deep learning. *bioRxiv*. doi: <https://doi.org/10.1101/2023.01.18.524615>

348. L.M. Cancel, D. Silas, **M. Bikson**, J.M. Tarbell (2022). Direct current stimulation modulates gene expression in isolated astrocytes with implications for glia-mediated plasticity. *Scientific Reports*, 12(17964). doi: <https://doi.org/10.1038/s41598-022-22394-8>

347. B. A. Cavendish, A. Lima, L. Bertola, L. Charvet, **M. Bikson**, A. R. Brunoni, & K. S. Vidal (2022). Combination of transcranial direct current stimulation with online cognitive training improves symptoms of Post-acute Sequelae of COVID-19: A case series. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 15(6), 1375-3577. doi: <https://doi.org/10.1016/j.brs.2022.09.008>

346. L. H. Stefano, D. B. Favoretto, D. C. Nascimento, L. R. A. Santos, **M. Bikson**, J. P. Leite, O. M. Pontes-Neto, D. J. Edwards, & T. G. S. Edwards (2022). Dataset of middle cerebral artery blood flow stability in response to high-definition transcranial electrical stimulation. *Data in Brief*, 45, 108603. doi: <https://doi.org/10.1016/j.dib.2022.108603>

345. M. Muccio, L. Walton Masters, G. Pilloni, P. He, L. Krupp, A. Datta, **M. Bikson**, L. Charvet, & Y. Ge (2022). Cerebral metabolic rate of oxygen (CMRO₂) changes measured with simultaneous tDCS-MRI in healthy adults. *Brain Research*, 1796, 148097. doi: <https://doi.org/10.1016/j.brainres.2022.148097>

344. A. R. Brunoni, H. Ekhtiari,A. Antal, P. Auvichayapat, C. Baeken, I. M. Benseñor, **M. Bikson**, P. Boggio, B. Borroni, F. Brighina, E. Brunelin, S. Carvalho, W. Caumo, P. Ciechanski, L. Charvet, V. P. Clark, R. Cohen Kadosh, M. Cotelli, A. Datta, ZD. Deng, R. De Raedt, R. De Ridder, P. B. Fitzgerald, A. Floel, F. Frohlich, M. S. George, P. Ghobadi-Azbari, S. Goerigk, R. H. Hamilton, S.J. Jaberzadeh, K. Hoy, D.J. Kidgell, A.K. Zanoozi, A. Kirton, S. Laureys, M. Lavidor, K. Lee, J. Leite, S. H. Lisanby, C. Loo, D. M. Martin, C. Miniussi, M. Mondino, K. Monte-Silva, L. Morales-Quezada, M. A. Nitsche, A. H. Okano, C. S. Oliverira, B. Onarheim, K. Pacheco-Barrios, F. Padberg, E. M Nakamura-Palacios, U. Palm, W. Paulus, C. Plewnia, A. Priori, T. K. Rajji, L. B. Razza, E. M. Rehn, G. Ruffini, K. Schellhorn, M. Zare-Bidoky, M. Simis, P. Skorupinski, P. Suen, A. Thibaut, L. C.L. Valiengo, MA. Vanderhasselt, S. Vanneste, G. Venkatasubramanian, I.R. Violante, A. Wexler, F. Fregni (2022). Digitalized transcranial electrical stimulation: A consensus statement. *Clinical Neurophysiology*, 143, 154-165. doi: <https://doi.org/10.1016/j.clinph.2022.08.018>

343. M. Schertz, Y. Karni-Visel, J. Genizi,H. Manishevitch,M. Lam, A. Akawi, M. Dudai, A. Fenton, **M. Bikson** (2022). Transcranial Direct Current Stimulation (tDCS) in children with ADHD: A randomized, sham-controlled pilot study. *Journal of Psychiatric Research*, 155, 302-312. doi: <https://doi.org/10.1016/j.jpsychires.2022.08.022>

342. A. L. Zannou, N. Khadka, & **M. Bikson** (2022). Bioheat Model of Spinal Column Heating During High-Density Spinal Cord Stimulation. *Neuromodulation: Technology at the Neural Interface*. doi: <https://doi.org/10.1016/j.neurom.2022.07.006>

341. B. W. Badran, S. M. Huffman, M. Dancy, C. W. Austelle, **M. Bikson**, S. A. Kautz, M. S. George (2022). A pilot randomized controlled trial of supervised, at-home, self-administered transcutaneous auricular vagus nerve stimulation (taVNS) to manage long COVID symptoms. *Bioelectronic Medicine*, 8(13). doi: <https://doi.org/10.1186/s42234-022-00094-y>

340. C. J. Czura, **M. Bikson**, L. Charvet, J. D. Z. Chen, M. Franke, M. Fudim, E. Grigsby, S. Hamner, J. M. Huston, N. Khodaparast, E. Krames, B. J. Simon, P. Staats, K. Vonck (2022). Neuromodulation Strategies to Reduce Inflammation and Improve Lung Complications in COVID-19 Patients. *Frontiers in Neurology*, 13. doi: <https://doi.org/10.3389/fneur.2022.897124>

339. J.P. Dmochowski, N. Khadka, L. Cardoso, E. Meneses, K. Lee, S. Kim, Y. Jin, **M. Bikson** (2022). Computational Modeling of Deep Tissue Heating by an Automatic Thermal Massage Bed: Predicting the Effects on Circulation. *Frontiers in Medical Technology*, 4. doi: <https://doi.org/10.3389/fmedt.2022.925554>

338. A. Moreira, L. Moscaleski, D. G. da S. Machado, **M. Bikson**, G. Unal, P. S. Bradley, T. Cevada, F. T. G. da Silva, A. F. Baptista, E. Morya, A. H. Okano (2022). Transcranial direct current stimulation during a prolonged cognitive task: The effect on cognitive and shooting performances in professional female basketball players. *Ergonomics*, 66(4), 492-505. doi: <https://doi.org/10.1080/00140139.2022.2096262>

337. L. Cardoso, N. Khadka, J. P., Dmochowski, E. Meneses, K. Lee, S. Kim, Y. Jin, Y., **M. Bikson** (2022). Computational modeling of posteroanterior lumbar traction by an automated massage bed: Predicting intervertebral disc stresses and deformation. *Frontiers in Rehabilitation Sciences*, 3. doi: <https://doi.org/10.3389/fresc.2022.931274>

336. G. Pilloni, L. E. Charvet, **M. Bikson**, N. Palekar, M.-J. Kim (2022). Potential of Transcranial Direct Current Stimulation in Alzheimer's Disease: Optimizing Trials Toward Clinical Use. *Journal of Clinical Neurology*, 18(4), 391–400. doi: <https://doi.org/10.3988/jcn.2022.18.4.391>

335. P.C.A. de Oliveira, T.A.B. de Araújo, D.G. da S. Machado, A.C. Rodrigues, **M. Bikson**, S.M. Andrade, A.H. Okano, H. Simplicio, R. Pegado, E. Morya (2022). Transcranial Direct Current Stimulation on Parkinson's Disease: Systematic Review and Meta-Analysis. *Frontiers in Neurology*, 12. doi: <https://doi.org/10.3389/fneur.2021.794784>

334. L.H. Stefano, D.B. Favoretto, D.C. Nascimento, L.R. Santos, F. Louzada, **M. Bikson**, J.P. Leite, O.M. Pontes-Neto, D.J. Edwards, T.G. Edwards (2022). Middle cerebral artery blood flow stability in response to high-definition transcranial electrical stimulation: A randomized sham-controlled clinical trial. *Clinical Neurology and Neurosurgery*, 107345. doi: <https://doi.org/10.1016/j.clineuro.2022.107345>

333. A. Antal, B. Luber, A. Brem, **M. Bikson**, A.R. Brunoni, R.C. Kadosh, V. Dubljevic, S. Fecteau, F. Ferreri, A. Flöel, M. Hallett, R.H. Hamilton, C.S. Herrmann, M. Lavidor, C. Loo, C. Lustenberger, S. Machado, C. Miniussi, V. Moladze, M.A. Nitsche, S. Rossi, P.M. Rossini, E. Santarnecchi, M. Seeck, G. Thut, Z. Turi, Y. Ugawa, G. Venkatasubramanian, N. Wenderoth, A. Wexler, U. Ziemann, W. Paulus (2022). Non-invasive brain stimulation and neuroenhancement, *Clinical Neurophysiology Practice*, 7, 146-165. doi: <https://doi.org/10.1016/j.cnp.2022.05.002>

332. A. Salameh, J. McCabe, M. Skelly, K.R. Duncan, Z. Chen, C. Tatsuoka, **M. Bikson**, E.C. Hardin, J.J. Daly, S. Pundik (2022). Stance Phase Gait Training Post Stroke Using Simultaneous Transcranial Direct Current Stimulation and Motor Learning-Based Virtual Reality-Assisted Therapy: Protocol Development and Initial Testing. *Brain Sciences*, 12(6), 701. doi: <https://doi.org/10.3390/brainsci12060701>

331 A. Quintiliano, **M. Bikson**, T. Oehmen, R. Pegado, G.M Kirsztajn (2022). Transcranial Direct Current Stimulation (tDCS): Pain Management in End-Stage Renal Disease - Report of an Early Randomized Controlled Trial. *Journal of Pain and Symptom Management*, 64(3), 234-243. doi: <https://doi.org/10.1016/j.jpainsymman.2022.05.018>

330. S.M. Andrade, M. C. de A. Silvestre, E. É. T. de França, M.H.B.S. Queiroz, K. de J. Santana, M.L.L H. Madruga, C.K.T.T. Mendes, E. A. de Oliveira, J.F. Bezerra, R.G. Barreto, S.M.A.F. da Silva, T.A. de Sousa, W.C. M. de Sousa, M.P. da Silva, V.M. C. Ribeiro, P. Lucena, D. Beltrammi, R.R. Catharino, E. Caparelli-Dáquer, B.M. Hampstead, A. Datta, A.L. Teixeira, B. Fernández-Calvo, J.R. Sato, **M. Bikson** (2022). Efficacy and safety of HD-tDCS and respiratory rehabilitation for critically ill patients with COVID-19 The HD-RECOVERY randomized clinical trial. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 15(3), 780–788. doi: <https://doi.org/10.1016/j.brs.2022.05.006>.

329. A.F DaSilva, A. Datta, J. Swami, D.J. Kim, P.G. Patil, **M. Bikson** (2022). The Concept, Development, and Application of a Home-Based High-Definition tDCS for Bilateral Motor Cortex Modulation in Migraine and Pain. *Frontiers in Pain Research*, 3. doi: <https://doi.org/10.3389/fpain.2022.798056>

328. P.T.J.A. Williams, D.Q. Truong, A.C. Seifert, J. Xu, **M. Bikson**, J.H. Martin (2022). Selective augmentation of corticospinal motor drive with trans-spinal direct current stimulation in the cat. *Brain Stimulation*, 15(3), 624-634. doi: <https://doi.org/10.1016/j.brs.2022.03.007>

327. TS. Baker, A.L. Zannou, D. Cruz, N. Khadka, C. Kellner, R. Tyc, **M. Bikson**, A. Costa (2022). Development and Clinical Validation of a Finite Element Method Model Mapping Focal Intracranial Cooling. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 1-1. doi: <https://doi.org/10.1109/TNSRE.2022.3161085>

326. H. Jeong, I. Song, Y. Chung, J. Park, S. Na, J. J. Im, **M. Bikson**, W. Lee, S.-Schik Yoo (2022). Short-Term Efficacy of Transcranial Focused Ultrasound to the Hippocampus in Alzheimer's Disease: A Preliminary Study. *Journal of Personalized Medicine*, 12(2), 250. doi: <https://doi.org/10.3390/jpm12020250>

325. E. Silva-Filho, G. Pilloni, L.E. Charvet, F. Fregni, A.R. Brunoni, **M. Bikson** (2022). Factors supporting availability of home-based Neuromodulation using remote supervision in middle-income countries; Brazil experience. Letter-to-the-Editor, *Brain stimulation*. 15(3), 385-387. doi: <https://doi.org/10.1016/j.brs.2022.02.005>

324. H. Cho, L. B. Razza, L. Borrione, **M. Bikson**, L. Charvet, T.A. Dennis-Tiwary, A.R. Brunoni, & P. Sudbrack-Oliveira (2022). Transcranial Electrical Stimulation for Psychiatric Disorders in Adults: A Primer. *Focus*, 20(1), 19-31. doi: <https://doi.org/10.1176/appi.focus.20210020>

323. M. Sharma, F. Farahani, **M. Bikson**, & L.C. Parra (2021). Weak DCS causes a relatively strong cumulative boost of synaptic plasticity with spaced learning. *Brain Stimulation*, 15(1), 57–62. doi: <https://doi.org/10.1016/j.brs.2021.10.552>

322. N. Gebodh, Z. Esmaeilpour, A. Datta & **M. Bikson** (2021). Dataset of concurrent EEG, ECG, and behavior with multiple doses of transcranial electrical stimulation. *Scientific Data* 8(1), 274. doi: <https://doi.org/10.1038/s41597-021-01046-y>

321. A.P. Jones, M. Goncalves-Garcia, B. Gibson, M.C.S. Trumbo, B.A. Coffman, B. Robert, H.A. Gill, T. Mullins, M.A. Hunter, C.S.H. Robinson, A. Combs, N. Khadka, **M. Bikson**, V.P. Clark (2021). Investigating the brain regions involved in tDCS-Enhanced category learning using finite element modeling. *Neuroimage: Reports*, 1(4),100048. doi: 10.1016/j.ynirp.2021.100048

320. Y. Xia, Y. Li, W. Khalid, **M. Bikson**, B.M. Fu (2021). Direct Current Stimulation Disrupts Endothelial Glycocalyx and Tight Junctions of the Blood-Brain Barrier in vitro. *Frontiers in Cell and Developmental Biology*, 9, 731028. doi: 10.3389/fcell.2021.731028

319. G. Unal, J.K. Swami, C. Canela, S.L. Cohen, N. Khadka, M. FallahRad, B. Short, M. Argyelan, H.A. Sackeim, **M. Bikson** (2021). Adaptive current-flow models of ECT: Explaining individual static impedance, dynamic impedance, and brain current density. *Brain Stimulation*, 14(5), 1154-1168. doi: 10.1016/j.brs.2021.07.012

318. D.G.d.S. Machado, **M. Bikson**, A. Datta, E. Caparelli-Dáquer, G. Unal, A.F. Baptista, E.S. Cyrino, L.M. Li, E. Morya, A. Moreira, A.H. Okano (2021). Acute effect of high-definition and conventional tDCS on exercise performance and psychophysiological responses in endurance athletes: a randomized controlled trial. *Scientific Reports*, 11(13911). doi: 10.1038/s41598-021-92670-6

317. M Bahr-Hosseini, **M. Bikson** (2021). Neurovascular-modulation: A review of primary vascular responses to transcranial electrical stimulation as a mechanism of action. *Brain Stimulation*, 14(4), 837-847. doi: 10.1016/j.brs.2021.04.015

316. A. Moreira, D.G.d.S. Machado, **M. Bikson**, G. Unal, P.S. Bradley, L. Moscaleski, T. Costa, G.C.S.G. Kalil, L.W. Chao, A.F. Baptista, E. Morya, A.H. Okano (2021). Effect of Transcranial Direct Current Stimulation on Professional Female Soccer Players' Recovery Following Official Matches. *Perceptual and Motor Skills*, 128(4), 1504-1529. doi: 10.1177/00315125211021239

315. S. Myruski, H. Cho, **M. Bikson**, T.A. Dennis-Tiwary (2021). Transcranial Direct Current Stimulation (tDCS) Augments the Effects of Gamified, Mobile Attention Bias Modification. *Frontiers in Neuroergonomics* 2021 May, 2:652162. doi: 10.3389/fnrgo.2021.652162

314. A.D. Farmer, A. Strzelczyk, A. Finisguerra, A.V. Gourine, A. Gharabaghi, A. Hasan, A.M. Burger, A.M. Jaramillo, A. Mertens, A. Majid, B. Verkuil, B.W. Badran, C. Ventura-Bort, C. Gaul, C. Beste, C.M. Warren, D.S. Quintana, D. Hä默er, E. Freri, E. Frangos, E. Tobaldini, E. Kaniunas, F. Rosenow, F. Capone, F. Panetsos, G.L. Ackland, G. Kaithwas, G.H. O'Leary, H. Genheimer, H.I.L. Jacobs, I. Van Diest, J. Schoenen, J. Redgrave, J. Fang, J. Deuchars, J.C. Széles, J.F. Thayer, K. More, K. Vonck, L. Steenbergen, L.C. Vianna, L.M. McTeague, M. Ludwig, M.G. Veldhuizen, M. De Couck, M. Casazza, M. Keute, **M. Bikson**, M. Andreatta, M. D'Agostini, M. Weymar, M. Betts, M. Prigge, M. Kaess, M. Roden, M. Thai, N.M. Schuster, N. Montano, N. Hansen, N.B. Kroemer, P. Rong, R. Fischer, R.H. Howland, R. Scocco, R. Sellaro, R.G. Garcia, S. Bauer, S. Gancheva, S. Stavrakis, S. Kampusch, S.A. Deuchars, S. Wehner, S. Laborde, T. Usichenko, T. Polak, T. Zaehle, U. Borges, V. Teckentrup, V.K. Jandackova, V. Napadow, J. Koenig (2021). International Consensus Based Review and Recommendations for Minimum Reporting Standards in Research on Transcutaneous Vagus Nerve Stimulation (Version 2020). *Frontiers in Human Neuroscience* 2021, 14(568051). doi: 10.3389/fnhum.2020.568051

313. C.G. De Souza, R. Pegado, J.F. Costa, E. Morya, A. Baptista, G. Unal, **M. Bikson**, A.H. Okano (2021). Alternate sessions of transcranial direct current stimulation (tDCS) reduce chronic pain in women affected by chikungunya. A randomized clinical trial. *Brain Stimulation* 2021. doi: 10.1016/j.brs.2021.02.015

312. P. Ghobadi-Azbari, A. Jamil, F. Yavari, Z. Esmaeilpour, N. Malmir, R. Mahdavifar-Khayati, G. Soleimani, Y.H. Cha, A.D. Shereen, M.A. Nitsche, **M. Bikson**, H. Ekhtiari (2021). fMRI and transcranial electrical stimulation (tES): A systematic review of parameter space and outcomes. *Prog Neuropsychopharmacol Biol Psychiatry*, 107, 110149. doi: 10.1016/j.pnpbp.2020.110149

311. N. Khadka, **M. Bikson** (2020). Neurocapillary-modulation. Neuromodulation: Technology at the Neural Interface 2020. doi: 10.1111/ner.13338

310. Z. Esmaeilpour, M. Jackson, G. Kronberg, T. Zhang, R. Esteller, B. Hershey, **M. Bikson** (2020). Limited sensitivity of hippocampal synaptic function or network oscillations to unmodulated kilohertz electric fields. *eNeuro*, 368(20). doi: 10.1523/ENEURO.0368-20.2020

309. A.F. Baptista, A. Baltar A.H. Okano, A. Moreira, A.C.P. Campos, A.M. Fernandes, A.R. Brunoni, B.W. Badran, C. Tanaka, D.C. de Andrade, D.G. da S. Machado, E. Morya, E. Trujillo, J.K. Swami, J.A. Camprodon, K. Monte-Silva, K.N. Sá, I. Nunes, J.B. Goulardins, **M. Bikson**, P. Sudbrack-Oliveira, P. de Carvalho, R.J. Duarte-Moreira, R.L. Pagano, S.K. Shinjo, Y. Zana (2020). Applications of Non-invasive Neuromodulation for the Management of Disorders Related to COVID-19. *Frontiers in Neurology*, 11(573718). doi: 10.3389/fneur.2020.573718

308. Y. Xia, W. Khalid, Z. Yin, G. Huang, **M. Bikson**, B.M. Fu (2020). Modulation of solute diffusivity in brain tissue as a novel mechanism of transcranial direct current stimulation (tDCS). *Scientific Reports*, 10(18488). doi: 10.1038/s41598-020-75460-4

307. P. Sehatpour, C. Dondé, D. Adair, J. Kreither, J. Lopez-Calderon, M. Avissar, **M. Bikson**, D. C. Javitt (2020). Comparison of cortical network effects of high-definition and conventional tDCS during visuomotor processing. *Brain Stimulation*, 14(1), 33–35. doi: 10.1016/j.brs.2020.11.004

306. N. Khadka, **M. Bikson** (2020). Role of skin tissue layers and ultra-structure in transcutaneous electrical stimulation including tDCS. *Physics in Medicine & Biology*, 65(22). doi:10.1088/1361-6560/abb7c1

305. S. Rossi, A. Antal, S. Bestmann, **M. Bikson**, C. Brewer, J. Brockmöller, L.L. Carpenter, M. Cincotta, R. Chen, J.F. Daskalakis, V. Di Lazzaro, M.D. Fox, M.S. George, D. Gilbert, V.K. Kimiskidis, G.Koch, S.J. Ilmoniemi, J.P. Lefaucheur, L. Leocani, S.H. Lisanby, C. Miniussi, F. Padberg, A. Pascual-Leone, W. Paulus, A.V. Peterchev, A. Quararone, A. Rotenberg, J. Rothwell, P.M. Rossini, E. Santarnecchi, M.M. Shafi, H.R. Siebner, Y. Ugawa, E.M. Wasserman, A. Zangen, U. Ziemann, M. Hallett (2020). Safety and recommendations for TMS use in healthy subjects and patient populations, with updates on training, ethical and regulatory issues: Expert Guidelines. *Clin. Neurophysiol.*, 132(1), 269-306. doi: 10.1016/j.clinph.2020.10.003

304. Z. Esmaeilpour, G. Kronberg, D. Reato, L.C. Parra, **M. Bikson**. Temporal interference stimulation targets deep brain regions by modulating neural oscillations. *Brain Stimulation*, 14(1), 55-56. doi: 10.1016/j.brs.2020.11.007

303. D. Vaclavik, M. Bechor, A. Foster, L.M. Gralnik, Y. Bar-Haim, D.S. Pine, **M. Bikson**, W.K. Silverman, B.C. Reeb-Sutherland, J.W. Pettit. Case series of transcranial direct current stimulation as an augmentation strategy for attention bias modification training in adolescents with anxiety disorders. *Clinical Psychology and Special Education* 2020;9(3):105-126. doi: 10.17759/cpse.2020090308

302. J.D. Bremner, N.Z. Gurel, M.T. Wittbrodt, M.H. Shandhi, M.H. Rapaport, J.A. Nye, B.D. Pearce, V. Vaccarino, A.J. Shah, J. Park, **M. Bikson**, O.T. Inan. Application of Noninvasive Vagal Nerve Stimulation to Stress-Related Psychiatric Disorders. *J. Pers. Med.* 2020, 10, 119; doi: 10.3390/jpm10030119

301. T.K. Rajji, C.R. Bowie, N. Herrmann, B.G. Pollock, **M. Bikson**, D.M. Blumberger, M.A. Butters, Z.J. Daskalakis, C.E. Fischer, A.J. Flint, A.C. Golas, A. Graff-Guerrero, S. Kumar, L. Lourenco, L. Mah, S. Ovaysikia, K.E. Thorpe, A.N. Voineskos, B.H. Mulsant; PACt-MD Study

Group. Design and Rationale of the PACT-MD Randomized Clinical Trial: Prevention of Alzheimer's dementia with Cognitive remediation plus transcranial direct current stimulation in Mild cognitive impairment and Depression. *J Alzheimers Dis.* 2020;76(2):733-751. doi: 10.3233/JAD-200141

300. F. Fregni, M.M. El-Hagrassy, K. Pacheco-Barrios, S. Carvalho, J. Leite, M Simis, J. Brunelin, E.M. Nakamura-Palacios, P. Marangolo, G. Venkatasubramanian, S. San-Juan, W. Caumo, **M. Bikson**, A.W. Brunoni, Neuromodulation Center Working Group. Evidence-based guidelines and secondary meta-analysis for the use of transcranial direct current stimulation (tDCS) in neurological and psychiatric disorders. *Int J Neuropsychopharmacol.* 2020 Jul 26;pyaa051. doi: 10.1093/ijnp/pyaa051

299. P.S. Adusumilli,, **M. Bikson**, N.P. Rizk, V.W. Rusch, B. Hristov, R. Grosser, K.S. Tan, I.S. Sarkaria, J. Huang, D. Molena, D.R. Jones, M.S. Bains. A prospective trial of intraoperative tissue oxygenation measurement and its association with anastomotic leak rate after Ivor Lewis esophagectomy. *J Thorac Dis* 2020;12(4):1449-1459 | doi: 10.21037/jtd.2020.02.58

298. **M. Bikson** et al. Guidelines for TMS/tES Clinical Services and Research through the COVID-19 Pandemic. *Brain Stimulation.* 2020 doi: 10.1016/j.brs.2020.05.010

297. Caulfield KA, Badran BW, Li X, **Bikson M**, George MS. Can Transcranial Electrical Stimulation Motor Threshold Estimate Individualized tDCS Doses Over the Prefrontal Cortex? Evidence from Reverse-Calculation Electric Field Modeling. *Brain Stimul.* 2020 Jul-Aug;13(4):1150-1152. doi: 10.1016/j.brs.2020.05.012.

296. M. Jog, K. Jann, L. Yan, Y. Huang, L. Parra, K. Narr, **M. Bikson**, DJJ. Wang. Concurrent Imaging of Markers of Current Flow and Neurophysiological Changes During tDCS. *Front. Neurosci.*, 21 April 2020 | doi: 10.3389/fnins.2020.00374

295. L.E. Charvet LE, M.T. Shaw, **M. Bikson**, A.J. Woods, H. Knotkova. Supervised transcranial direct current stimulation (tDCS) at home: A guide for clinical research and practice. *Brain Stimulation* 13(3): 686-693, 2020. doi: 10.1016/j.brs.2020.02.011

294. G. Unal, B. Ficek, K. Webster, S. Shahabuddin, D. Truong, B. Hampstead, **M. Bikson**, K. Tsapkini K. Impact of brain atrophy on tDCS and HD-tDCS current flow: a modeling study in three variants of primary progressive aphasia. *Neurol Sci.* 2020 Feb 10. doi: 10.1007/s10072-019-04229-z.

293. B. Badran, D. Jenkins, D. Cook, S. Thompson, M. Dancy, W. DeVries, G. Mappin, P. Summers, **M. Bikson**, H. Bonilha, M. George. Transcutaneous Auricular Vagus Nerve Stimulation (taVNS)-Paired Rehabilitation for Oromotor Feeding Problems in Newborns: An Open Label Pilot Study. *Frontiers in Human Neuroscience In Press*

292. D. W. Shin, J. Fan, E. Luu, W. Khalid, N. Khadka, **M. Bikson**. "In Vivo Modulation of the Blood–Brain Barrier Permeability by Transcranial Direct Current Stimulation (tDCS)" *Annals of Biomedical Engineering*, Jan. 2020. doi: 10.1007/s10439-020-02447-7 *In Press*.

291. H. Borges, A. Dufau, B. Paneri, A. J. Woods, H. Knotkova, **M. Bikson**, "Updated Technique for Reliable, Easy, and Tolerated Transcranial Electrical Stimulation Including Transcranial Direct Current Stimulation," *Journal of Visualized Experiments*, no. 155, Jan. 2020. doi: 10.3791/59204

290. **M. Bikson** and J. Dmochowski, "What it means to go deep with non-invasive brain stimulation," *Clinical Neurophysiology*, Dec. 2019. doi: 10.1016/j.clinph.2019.12.003. *In Press*.

289. Z. Esmaeilpour, A.D. Shereen, P. Ghobadi-Azbari, A. Datta, A.J. Woods, M. Ironside, J. O'Shea, U. Kirk, **M. Bikson**, H. Ekhtiari. Methodology for tDCS integration with fMRI. *Human Brain Mapping*, Dec. 2019. doi: 10.1002/hbm.24908. *In Press*.

288. S. Koganemaru, Y. Mikami, M. Matsuhashi, D.Q. Truong, **M. Bikson**, K. Kansaku, T. Mima. Cerebellar transcranial alternating current stimulation modulates human gait rhythm. *Neuroscience Research*, Dec. 2019. doi: 10.1016/j.neures.2019.12.003

287. N. Khadka and **M. Bikson**. Response to the Letter to the Editor by Caraway et al. on 'Tissue Temperature Increases by a 10 kHz Spinal Cord Stimulation System: Phantom and Bioheat Model. *Neuromodulation: Technology at the Neural Interface*, vol. 22, no. 8, pp. 988–988, Dec. 2019. doi: 10.1111/ner.13079

286. N. Khadka, X. Liu, H. Zander, J. Swami, E. Rogers, S.F. Lempka, **M. Bikson**. Realistic Anatomically Detailed Open-Source Spinal Cord Stimulation (RADO-SCS) Model. *bioRxiv*, 29-Nov-2019. doi: 10.1101/857946

285. A. Sivaramakrishnan, A. Datta, **M. Bikson**, S. Madhavan, Remotely supervised transcranial direct current stimulation: A feasibility study for amyotrophic lateral sclerosis. *NeuroRehabilitation*, vol. 45, no. 3, pp. 369–378, Dec. 2019. Available: doi: 10.3233/NRE-192851. *In Press*.

284. E. Morya, K. Monte-Silva, **M. Bikson**, Z. Esmaeilpour, C.E. Biazoli, A. Fonseca, T. Bocci, F. Farzan, R. Chatterjee, J.M. Hausdorff, D.G. da Silva Machado, A. Russowsky Brunoni, E. Mezger, L. Aparecida Mascaleski, R. Pegado, J.R. Sato, M.S. Caetano, K. Nunes Sá, C. Tanaka, L.M. Li, A. Fontes Baptista, A. Hideki Okano. Beyond the target area: an integrative view of tDCS-induced motor cortex modulation in patients and athletes. *Journal of NeuroEngineering and Rehabilitation*, vol. 16, no. 1, Nov. 2019. doi: 10.1186/s12984-019-0581-1

283. V.V. Lazarev, N. Gebodh, T. Tamborino, **M. Bikson**, E.M. Caparelli-Daquer. Experimental-design Specific Changes in Spontaneous EEG and During Intermittent Photic Stimulation by High Definition Transcranial Direct Current Stimulation. *Neuroscience* 2020;426:50–8. doi: 10.1016/j.neuroscience.2019.11.016.

282. J. Jiang, D. Q. Truong, Z. Esmaeilpour, Y. Huang, B. W. Badran, and **M. Bikson**. Enhanced tES and tDCS computational models by meninges emulation. *Journal of Neural Engineering*, Nov. 2019. doi: 10.1088/1741-2552/ab549d

281. M. Argyelan, L. Oltedal, Z.-D. Deng, B. Wade, **M. Bikson**, A. Joanlanne, S. Sanghani, H. Bartsch, M. Cano, A.M. Dale, U. Dannlowski, A. Dols, V. Enneking, R. Espinoza, U. Kessler, K.L. Narr, K.J. Oedegaard, M.L. Oudega, R. Redlich, M.L. Stek, A. Takamiya, L. Emsell, F. Bouckaert, P. Sienraert, J. Pujol, I. Tendolkar, P. van Eijndhoven, G. Petrides, A.K. Malhotra, C. Abbott. Electric field causes volumetric changes in the human brain. *eLife*, vol. 8, Oct. 2019. doi: 10.7554/eLife.49115

280. G. Kronberg, A. Rahman, M. Sharma, **M. Bikson**, and L. C. Parra, Direct current stimulation boosts hebbian plasticity in vitro. *Brain Stimulation*, Oct. 2019. doi: 10.1016/j.brs.2019.10.014

279. N. Khadka, D. Q. Truong, P. Williams, J. H. Martin, and **M. Bikson**, The Quasi-uniform assumption for Spinal Cord Stimulation translational research. *Journal of Neuroscience Methods*, vol. 328, p. 108446, Dec. 2019. doi: 10.1016/j.jneumeth.2019.108446

278. M. Bahr Hosseini, J. Hou, **M. Bikson**, M. Iacoboni, J. Gornbein, and J. L. Saver, Central Nervous System Electrical Stimulation for Neuroprotection in Acute Cerebral Ischemia. *Stroke*. vol. 50, no. 10, pp. 2892–2901, Oct. 2019 [Online]. doi: 10.1161/STROKEAHA.119.025364

277. N. Khadka, H. Borges, B. Paneri, T. Kaufman, E. Nassis, A.L. Zannou, Y. Shin, H. Choi, S. Kim, K. Lee, **M. Bikson**. Adaptive current tDCS up to 4 mA. *Brain Stimulation*. vol. 13, no. 1, pp. 69–79, Jan. 2020. doi: 10.1016/j.brs.2019.07.027.

276. **M. Bikson**, Z. Esmaeilpour, D. Adair, G. Kronberg, W.J. Tyler, A. Antal, A. Datta, B.A. Sabel, M.A. Nitsche, C. Loo, D. Edwards, H. Ekhtiari, H. Knotkova, A.J. Woods, B.M. Hampstead, B.W. Badran, A.V. Peterchev. (2019). Transcranial electrical stimulation nomenclature. *Brain Stimulation*. doi: 10.1016/j.brs.2019.07.010

275. O. Seibt, D. Truong, N. Khadka, Y. Huang, **M. Bikson**. Computational Finite Element Method (FEM) forward modeling workflow for transcranial Direct Current Stimulation (tDCS) current flow on MRI-derived head: Simpleware and COMSOL Multiphysics tutorial. bioRxiv. <https://doi.org/10.1101/704940>

274. A. Valero-Cabré, C. Sanches, J. Godard, O. Fracchia, B. Dubois, R. Levy, D.Q. Truong, **M. Bikson**, M. Teichmann. (2019). Language boosting by transcranial stimulation in progressive supranuclear palsy. *Neurology*, doi: 10.1212/WNL.0000000000007893.

273. H. Ekhtiari, H. Tavakoli, G. Addolorato, C. Baeken, A. Bonci, S. Campanella, L. Castelo-Branco, G. Challet-Bouju, V.P. Clark, E. Claus, P.N. Dannon, A. Del Felice, T. den Uyl, M. Diana, M. di Giannantonio, J.R. Fedota, P. Fitzgerald, L. Gallimberti, M. Grall-Bronnec, S.C. Herremans, M.J. Herrmann, A. Jamil, E. Khedr, C. Kouimtsidis, K. Kozak, E. Krupitsky, C. Lamm, W.V. Lechner, G. Madeo, N. Malmir, G. Martinotti, W. McDonald, C. Montemitro, E.M. Nakamura-Palacios, N. Nasehi, X. Noël, M. Nosratabadi, M. Paulus, M. Pettor Russo, B. Pradhan, S.K. Praharaj, H. Rafferty, G. Sahlem, B.J. Salmeron, A. Sauvaget, R.S. Schluter, C. Sergiou, A. Shahbabaie, C. Sheffer, P.A. Spagnolo, V.R. Steele, T-F Yuan, J. van Dongen, V. Van Waes, G. Venkatasubramanian, A. VerdejoGarcía, I. Verveer, J. Welsh, M.J. Wesley, K. Witkiewitz, F. Yavari, M.-R. Zarrindast, L. Zawertailo, X. Zhang, Y.-H.- Cha, T.P. George, F. Frohlich, A.E. Goudriaan, S. Fecteau, S.B. Daughters, E.A. Stein, F. Fregni, M.A. Nitsche, A. Zangen, **M. Bikson**, C.A. Hanlon. (2019). Transcranial Electrical and Magnetic Stimulation (tES and TMS) for Addiction Medicine: A consensus paper on the present state of the science and the road ahead. *Neuroscience & Biobehavioral Reviews*. doi: 10.1016/j.neubiorev.2019.06.007. In Press.

272. J.J. Im, H. Jeong, **M. Bikson**, A.J. Woods, G. Unal, J.K. Oh, S. Na, J-S. Park, H. Knotkova, I-K. Song, Y-A. Chung. Effects of 6-month at-home transcranial direct current stimulation on cognition and cerebral glucose metabolism in Alzheimer's disease. *Brain Stimulation*. 2019. doi: 10.1016/j.brs.2019.06.003. In Press

271. O. Meiron, R. Gale, J. Namestnic, O. Bennet-Back, N. Gebodh, Z. Esmaeilpour, V. Mandzhiyev, **M. Bikson**. Antiepileptic Effects of a Novel Non-invasive Neuromodulation Treatment in a Subject With Early-Onset Epileptic Encephalopathy: Case Report With 20 Sessions of HD-tDCS Intervention. *Front. Neurosci.* 13:547. 2019. doi: 10.3389/fnins.2019.00547

270. G. V. Ambrose-Zaken, M. FallahRad, H. Bernstein, R. Wall Emerson, **M. Bikson**. Wearable Cane and App System for Improving Mobility in Toddlers/Pre-schoolers With Visual Impairment. *Front. Educ.* 4:44. 2019. doi: 10.3389/feduc.2019.00044

269. A. L. Zannou, N. Khadka, D. Truong, M. FallahRad, B. Kopell, **M. Bikson**. Tissue Temperature Increases by a 10 kHz Spinal Cord Stimulation System: Phantom and Bioheat Model. *Neuromodulation: Technology at the Neural Interface*. doi: 10.1111/ner.12980. 2019.

268. Y. Huang, A. Datta, **M. Bikson**, L.C. Parra. Realistic vOlumetric-Approach to Simulate Transcranial Electric Stimulation -- ROAST -- a fully automated open-source pipeline. *Journal of Neural Engineering*. 2019. doi: 10.1088/1741-2552/ab208d. *In Press*

267. M. FallahRad, A.L. Zannou, N. Khadka, S.A. Prescott, S. Ratte, T. Zhang, R. Esteller, B. Hershey, **M. Bikson**. Topical Review: Electrophysiology equipment for reliable study of kHz electrical stimulation. *The Journal of Physiology*. 2019. doi: 10.1113/JP277654.

266. E. Lattari, L.A.F. Vieira, B.R.R. Oliveira, G. Unal, **M. Bikson**, R.C. de Mello Pedreiro, S.R. Marques Neto, S. Machado, G.A. Maranhão-Neto. Effects of Transcranial Direct Current Stimulation With Caffeine Intake on Muscular Strength and Perceived Exertion. *Journal of Strength and Conditioning Research*, 2019. doi: 10.1519/jsc.0000000000003123.

265. R. Hadar, R. Winter, H. Edemann-Callesen, F. Wieske, B. Habelt, N. Khadka, V. Felgel, E. Barroeta Hlusicka, J. Reis, C. Alexandru Tatarau, K. Funke, B. Fritsch, N. Bernhardt, **M. Bikson**, M.A. Nitsche, C. Winter. Prevention of schizophrenia deficits via non-invasive adolescent frontal cortex stimulation in rats. *Nature Molecular Psychiatry*. 2019. doi: 10.1038/s41380-019-0356-x.

264. C. Fonteneau, M. Mondino, M. Arns, C. Baeken, **M. Bikson**, A.R. Brunoni, M.J. Burke, T. Neuvonen, F. Padberg, A. Pascual-Leone, E. Poulet, G. Ruffini, E. Santarnecchi, A. Sauvaget, K. Schellhorn, M-F. Suaud-Chagny, U. Palm, J. Brunelin. Sham tDCS: a hidden source of variability? Reflections for further blinded, controlled trials. *Brain Stimulation*. doi: 10.1016/j.brs.2018.12.977 (*In Press*). 2019

263. B.W. Badran, A.B. Yu, D. Adair, G. Mappin, W.H. DeVries, D.D. Jenkins, M.S. George, **M. Bikson**. Laboratory Administration of Transcutaneous Auricular Vagus Nerve Stimulation (taVNS): Technique, Targeting, and Considerations. *J. Vis. Exp.* (), e58984, doi:10.3791/58984 (2018).

262. D.G. da S Machado, G. Unal, S.M. Andrade, A. Moreira, L.R. Altimari, A.R. Brunoni, S. Perrey, A.R. Mauger, **M. Bikson**, A.H. Okano. (2018). Effect of transcranial direct current stimulation on exercise performance: A systematic review and meta-analysis. *Brain Stimulation*.12(3), 593-605. doi: 10.1016/j.brs.2018.12.227

261. R. Hadar, R. Winter, H. Edemann-Callesen, F. Wieske, B. Habelt, N. Khadka, V. Felgel, E. Barroeta Hlusicka, J. Reis, C. Alexandru Tatarau, K. Funke, B. Fritsch, N. Bernhardt, **M. Bikson**, M.A. Nitsche, C. Winter. Prevention of schizophrenia deficits via non-invasive adolescent frontal cortex stimulation in rats. *Nature Molecular Psychiatry* (*In Press*). 2018 doi: 10.1038/s41380-019-0356-x

260. B. Dobbs, N. Pawlak., M. Biagioli, S. Agarwal, M. Shaw, G. Pilloni, **M. Bikson**, A. Datta, L. Charvet (2018). Generalizing remotely supervised transcranial direct current stimulation (tDCS): feasibility and benefit in Parkinson's disease. *J Neuroeng Rehabil*, 15(1). doi: 10.1186/s12984-018-0457-9

259. E.M. Marron, R. Viejo-Sobera, G. Cuatrecasas, D. Redolar, P. García-Lorda, A. Datta, **M. Bikson**, G. Magerowski, M. Alonso-Alonso. Prefronto-cerebellar neuromodulation affects appetite in obesity. 2018; *Int J Obesity*. doi: 10.1038/s41366-018-0278-8

258. S.H. Lee, J.J. Im, J.K. Oh, E.K. Choi, S. Yoon, **M. Bikson**, I.-U. Song, H. Jeong, Y.-A. Chung (2018). Transcranial direct current stimulation for online gamers: A prospective single-arm feasibility study. *Journal of Behavioral Addictions*, 1–5. Akademiai Kiado Zrt. doi: 10.1556/2006.7.2018.107

257. N. Gebodh, Z. Esmaeilpour, D. Adair, K. Chelette, J. Dmochowski, A.J. Woods, E.S. Kappenman, L.C. Parra, **M. Bikson**. Inherent physiological artifacts in EEG during tDCS. *NeuroImage*. (185). pp. 408-424. 15 January 2019, doi: 10.1016/j.neuroimage.2018.10.025.

256. B.W. Badran, A.B. Yu, D.K.P. Adair, G. Mappin, W.H. DeVries, D.D. Jenkins, M.S. George, **M. Bikson**. Methodological Description of the Laboratory Administration of Transcutaneous Auricular Vagus Nerve Stimulation (taVNS) in Humans: Technique, Targeting and Considerations. *J Vis Exp*. 2018. *In Press*. doi: 10.1038/s41380-019-0356-x

255. E. Silva-Filho, A.H. Okano, E. Morya, J. Albuquerque, E. Cacho, G. Unal, **M. Bikson**, R. Pegado. Neuromodulation treats Chikungunya arthralgia: a randomized controlled trial. *Sci. Rep.* 8:16010. 2018 October 30, doi: 10.1038/s41598-018-34514-4

254. T.E.G. Santos, F.B. Favoretto, I.G. Toostani, D.C. Nascimento, B.P. Rimoli, E. Bergonzoni, T.W. Lemos, D.Q. Truong, A.C.B Delbem, B. Makkiabadi, R. Moraes, F. Louzada, **M. Bikson**, J.P. Leite, D.J. Edwards. Manipulation of Human Verticality Using High-Definition Transcranial Direct Current Stimulation. *Front. Neurol.* 2018 October 22, doi: 10.3389/fneur.2018.00825

253. A.L. Zannou*, N. Khadka*, D.Q. Truong, T. Zhang, R. Esteller, B. Hershey, **M. Bikson**. Temperature Increases by kilohertz frequency Spinal Cord Stimulation. *Brain Stim.* 2018. doi: 10.1016/j.brs.2018.10.007.

252. D.Q. Truong, **M. Bikson**. Physics of Transcranial Direct Current Stimulation Devices and Their History. *The Journal of ECT*. 34(3), pp. 137–143. 2018 September 01, doi: 10.1097/yct.0000000000000531

251. N. Khadka, H. Borges, A.L. Zannou, J. Jang, B. Kim, K. Lee, **M. Bikson**. Dry tDCS: Tolerability of a novel multilayer hydrogel composite non-adhesive electrode for transcranial direct current stimulation. *Brain Stim.* 11(5), pp. 1044-1053. 2018 July 29, doi: 10.1016/j.brs.2018.07.049

250. B.W. Badran, D.D. Jenkins, W.H. Devries, M. Dancy, P.M. Summers, G.M. Mappin, H. Bernstein, **M. Bikson**, P. Cocker-Bolt, M.S. George. Transcutaneous Auricular Vagus Nerve Stimulation (taVNS) for Improving Oromotor Function in Newborns. *Brain Stim.* 2018 June 30, doi: 10.1016/j.brs.2018.06.009

249. L.M. Cancel, K. Arias, **M. Bikson**, J.M. Tarbell. Direct current stimulation of endothelial monolayers induces a transient and reversible increase in transport due to the electroosmotic effect. *Sci. Rep.* 2018 June 18. 8:9265 doi: 10.1038/s41598-018-27524-9

248. A. Riggs, V. Patel, B. Paneri, R.K. Portenoy, **M. Bikson**, H. Knotkova. At-Home Transcranial Direct Current Stimulation (tDCS) with Telehealth Support for Symptom Control in Chronically-Ill Patients with Multiple Symptoms. *Front. Behav. Neurosci.* 12:93. 2018 May 22 doi: 10.3389/fnbeh.2018.00093

247. Y. Huh, D. Jung, T. Seo, S. Sun, S.H. Kim, H. Rhim, S. Chung, C. Kim, Y. Kwon, **M. Bikson**, Y. Chung, J.J. Kim, J. Cho. Brain stimulation patterns emulating endogenous thalamocortical input to parvalbumin-expressing interneurons reduce nociception in mice. *Brain Stim.* 2018 May 09, doi: 10.1016/j.brs.2018.05.007

246. J. Reckow, A. Rahman-Filipiak, S. Garcia, S. Schlaeflin, O. Calhoun, A.F. DaSilva, **M. Bikson**, B.M. Hampstead. Tolerability and blinding of 4x1 High-Definition transcranial direct current stimulation (HD-tDCS) at two and three millamps. *Brain Stim.* 2018 May 04, doi: 10.1016/j.brs.2018.04.022

245. H. Knotkova, A. Riggs, D. Berisha, H. Borges, H. Bernstein, V. Patel, D.Q. Truong, G. Unal, D. Arce, A. Datta, **M. Bikson**. Automatic M1-SO Montage Headgear for Transcranial Direct Current Stimulation (TDCS) Suitable for Home and High-Throughput In-Clinic Applications. *Neuromodulation*. 2018 March 09, doi: 10.1111/ner.12786

244. P.Y. Chhatbar, S.A. Kautz, I. Takacs, N.C. Rowland, G.J. Revuelta, M.S. George, **M. Bikson**, W. Feng. Evidence of transcranial direct current stimulation-generated electric fields at subthalamic level in human brain *in vivo*. *Brain Stimul.* 2018, doi: 10.1016/j.brs.2018.03.006

243. **M. Bikson**, A. Ruiz-Nuño, D. Miranda, G. Kronberg, P. Jiruska, J.E. Fox, J.G.R. Jefferys. Synaptic transmission modulates while non-synaptic processes govern the transition from pre-ictal to seizure activity *in vitro*. *bioRxiv* 280321. 2018 March 11 doi: 10.1101/280321

242. W. Hee Lee, N.I. Kennedy, **M. Bikson**, S. Frangou. A computational assessment of target engagement in the treatment of auditory hallucinations with transcranial direct current stimulation. *Front. Psychol.* 9:48. 2018 Feb 22. doi: 10.3389/fpsyg.2018.00048

241. H. Edemann-Callesen, B. Habelt, F. Wieske, M. Jackson, N. Khadka, D. Mattei, N. Bernhardt, A. Heinz, D. Liebetanz, **M. Bikson**, F. Padberg, R. Hadar, MA Nitsche, C. Winter. Non-invasive modulation reduces repetitive behavior in a rat model through the sensorimotor cortico-striatal circuit. *Trans Psy* 2018. doi: 10.1038/s41398-017-0059-5

240. **M. Bikson**, A.R. Brunoni, L.E. Charvet, V.P. Clark, L.G. Cohen, Z. Deng, J. Dmochowski, D.J. Edwards, F. Frohlich, E.S. Kappenman, K.O. Lim, C. Loo, A. Mantovani, D.P. McMullen, L.C. Parra, M. Pearson, J.D. Richardson, J.M. Rumsey, P. Sehatpour, D. Sommers, G. Unal, E.M. Wassermann, A.J. Woods, S.H. Lisanby. Rigor and reproducibility in research with transcranial electrical stimulation: An NIMH-sponsored workshop. *Brain Stimul* 2017 Dec 29. doi: 10.1016/j.brs.2017.12.008

239. Z. Esmaeilpour, P. Marangolo, B.M. Hampstead, S. Bestmann, E. Galletta, H. Knotkova, **M. Bikson**. Incomplete evidence that increasing current intensity of tDCS boosts outcomes. *Brain Stimul*. March-April 2017; 11(2): 310–321. doi: 10.1016/j.brs.2017.12.002

238. O. Meiron, R. Gale, J. Namestnic, O. Bennet-Back, J. Davia, N. Gebodh, D. Adair, Z. Esmaeilpour, **M. Bikson**. High-Definition transcranial direct current stimulation in early onset epileptic encephalopathy: a case study. *Brain Inj* 2017 Nov 20. doi: 10.1080/02699052.2017.1390254

237. V. Rawji, M. Ciocca, A. Zacharia, D. Soares, D. Truong, **M. Bikson**, J. Rothwell, S. Bestmann. tDCS changes in motor excitability are specific to orientation of current flow. *Brain Stimul* 2017 Nov 2. doi: 10.1016/j.brs.2017.11.001

236. **M. Bikson**, B. Paneri, A. Mourdoukoutas, Z. Esmaeilpour, B.W. Badran, R. Azzam, D. Adair, A. Datta, X. H. Fang, B. Wingeiner, D. Chao, M. Alonso-Alonso, K. Lee, H. Knotkova, A. J. Woods, D. Hagedorn, D. Jeffery, J. Giordano, W. J. Tyler. Limited output transcranial electrical stimulation (LOTES-2017): Engineering principles, regulatory statutes, and industry standards for wellness, over-the-counter, or prescription devices with low risk. *Brain Stimul* 2017 October 15. 11:134-157 doi: 10.1016/j.brs.2017.10.012

235. A. P. Mourdoukoutas, D. Truong, D. Adair, B. Simon, **M. Bikson**, High-resolution multi-scale computational model for non-invasive cervical vagus nerve stimulation. *Neuromodulation* 2017. doi: 10.1111/ner.12706.

234. C. Robinson, M. Armenta, A. Combs, M.L. Lamphere, G.J. Garza, J. Neary, J.H. Wolfe, E. Molina, D.E. Semey, C.M. McKee, S.J. Gallegos, A.P. Jones, M.C. Trumbo, H. Al-Azzawi, M.A. Hunter, G. Lieberman, B.A. Coffman, M. Aboseria, **M. Bikson**, V.P. Clark, K. Witkiewitz. Modulating affective experience and emotional intelligence with loving kindness meditation and Transcranial Direct Current Stimulation: A Pilot Study. *Soc. Neurosci* 14:1. 2017. doi: 10.1080/17470919.2017.1397054.

233. M.T. Shaw, M. Kasschau, B. Dobbs, N. Pawlak, W. Pau, K. Sherman, **M. Bikson**, A. Datta, L.E. Charvet. Remotely Supervised Transcranial Direct Current Stimulation: An Update on Safety and Tolerability. *J. Vis. Exp.* 2017 Oct7. (128), e56211, doi: 10.3791/56211.

232. N. Zareen, M. Shinozaki, D. Ryan, H. Alexander, A. Amer, D.Q. Truong, N. Khadka, A. Sarkar, S. Naeem, **M. Bikson**, J.H. Martin. Motor cortex and spinal cord neuromodulation promote corticospinal tract axonal outgrowth and motor recovery after cervical contusion spinal cord injury. *Exp Neurol.* 2017 Nov; 297:179-189. doi: 10.1016/j.expneurol.2017.08.004.

231. M.P. Jackson, **M. Bikson**, D. Liebetanz, M. Nitsche. How to consider animal data in tDCS safety standards. *Brain Stimul.* 2017 Nov-Dec;10(6):1141-1142. doi: 10.1016/j.brs.2017.08.004.

230. L.E. Charvet, B. Dobbs, M.T. Shaw, **M. Bikson**, A. Datta, L.B. Krupp. Remotely supervised transcranial direct current stimulation for the treatment of fatigue in multiple sclerosis: Results from a randomized, sham-controlled trial. *Mult. Scler. J.* 2017 Sep 22; 00(0): 1-10. doi: <https://doi.org/10.1177/1352458517732842>.

229. J. Leite, O.F. Goncalves, P. Pereira, N. Khadka, **M. Bikson**, F. Fregni, S. Carvalho. The differential effects of unihemispheric and bihemispheric tDCS over the inferior frontal gyrus on proactive control. *Neurosci Res.* 2017. doi: 10.1016/j.neures.2017.08.005.

228. S. Rabau, G.S. Shekhawat, M. Aboseria, D. Griepp, V.V. Rompaey, **M. Bikson**, P.V. de Heyning. Comparison of the long-term effect of positioning the cathode in tDCS in tinnitus patients. *Front. Aging Neurosci.* 2017 July 28; 9(217). doi: 10.3389/fnagi.2017.00217.

227. M.D. dos Santos, V.B. Cavenaghi, A.P.M.G. Mac-Kay, V. Serafim, A. Venturi, D.Q. Truong, Y. Huang, P.B. Boggio, F. Fregni, M. Simis, **M. Bikson**, R.J. Gagliardi. Non-invasive brain stimulation and computational models in post-stroke aphasic patients: single session of transcranial magnetic stimulation and transcranial direct current stimulation. A randomized clinical trial. *São Paulo Med J.* doi: 10.1590/1516-3180.2016.0194060617

226. A. Antal, I. Alekseichuk, **M. Bikson**, ...W. Paulus Et al. Low intensity transcranial electric stimulation: Safety, ethical, legal regulatory and application guidelines. *Clin Neurophysiol.* 2017 Jun 19. doi:10.1016/j.clinph.2017.06.001.

225. M.P. Jackson, D. Truong, M.L. Brownlow, J.A. Wagner, R.A McKinley, **M. Bikson**, R. Jankord. Safety parameter considerations of anodal transcranial Direct Current Stimulation in rats. *Brain Behav Immun.* 2017 Aug; 64:152-161. doi: 10.1016/j.bbi.2017.04.008.

224. J.P Dmochowski, L. Koessler, A. Norcia, **M. Bikson**, L.C. Parra. Optimal use of EEG recordings to target active brain areas with transcranial electrical stimulation. *Neuroimage.* 2017 May 31; 157:69-80. doi: 10.1016/j.neuroimage.2017.05.059.

223. B.M. Hampstead, K. Sathian, **M. Bikson**, A.Y. Stringer. Combined mnemonic strategy training and high-definition transcranial direct current stimulation for memory deficits in mild cognitive impairment. *Alzheimers Dement (N Y)*. 2017 May 15; 3:459-470. doi: 10.1016/j.trci.2017.04.008

222. D. Edwards, M. Cortes, S. Wortman-Jutt, D. Putrino, **M. Bikson**, G. Thickbroom, A. Pascual-Leone. Transcranial Direct Current Stimulation and Sports Performance. *Front Hum Neurosci*. 2017; 11: 243. doi: 10.3389/fnhum.2017.00243

221. Z. Esmaeilpour, P. Schestatsky, **M. Bikson**, A.R. Brunoni, A. Pellegrinelli, F.X. Piovesan, M.M. Santos, R.B. Menezes, F. Fregni. Notes on Human Trials of Transcranial Direct Current Stimulation between 1960 and 1998. *Front Hum Neurosci*. 2017 Feb 23; 11:71. doi: 10.3389/fnhum.2017.00071

220. A. Rahman, B. Lafon, L.C. Parra, **M. Bikson**. Direct current stimulation boosts synaptic gain and cooperativity in vitro. *J Physiol*. 2017 Jun 1;595(11):3535-3547. doi: 10.1113/JP273005

219. M.P. Jackson, D. Truong, M.L. Brownlow, J.A. Wagner, R.A. McKinley, **M. Bikson**, R. Jankord. Safety parameter considerations of anodal transcranial Direct Current Stimulation in rats. *Brain Behav Immun*. 2017 Aug; 64:152-161. doi: 10.1016/j.bbi.2017.04.008.

218. J. Giordano, **M. Bikson**, E.S. Kappenman, V.P. Clark, H.B. Coslett, M.R. Hamblin, R. Hamilton, R. Jankord, W.J. Kozumbo, R. McKinley, M.A. Nitsche, J.P. Reilly, K. Richardson, R. Wurzman, E. Calabrese. Mechanisms and Effects of Transcranial Direct Current Stimulation. *Dose Response*. 2017 Jan-Mar; 15(1):1-22. doi: 10.1177/1559325816685467.

217. A. De Paolis, **M. Bikson**, J.T. Nelson, J.A. de Ru, M. Packer, L. Cardoso. Analytical and numerical modeling of the hearing system: advances towards the assessment of hearing damage. *Hear Res*. 2017 Jun; 349:111-128. doi: 10.1016/j.heares.2017.01.015.

216. Y. Huang, A.A. Liu, B. Lafon, D. Friedman, M. Dayan, X. Wang, **M. Bikson**, W.K. Doyle, O. Devinsky, L.C. Parra. Measurements and models of electric fields in the 'in vivo' human brain during transcranial electric stimulation. *eLife*. 2017 Feb 7;6. doi: 10.7554/eLife.18834.

215. C. Chen, **M. Bikson**, L. Chou, C. Shan, N. Khadka, W. Chen, F. Fregni. Higher-order power harmonics of pulsed electrical stimulation modulates corticospinal contribution of peripheral nerve stimulation. *Sci Rep*. 2017 Mar 3; 7:43619. doi: 10.1038/srep43619.

214. L. Charvet, M. Shaw, B. Dobbs, A. Frontario, K. Sherman, **M. Bikson**, A. Datta, L. Krupp, E. Zeinapour, M. Kasschau. Remotely-Supervised Transcranial Direct Current Stimulation (RS-tDCS) Increases the Benefit of At-Home Cognitive Training in Multiple Sclerosis. Neuromodulation: Technology at the Neural Interface. *Neuromodulation*. 2017 Feb 22. doi: 10.1111/ner.12583.

213. R. Sebastian, S. Saxena, K. Tsapkini, A.V. Faria, C. Long, A. Wright, C. Davis, D.C. Tippett, A.P. Moudoukoutas, **M. Bikson**, P. Celink, A. Hillis. Cerebellar tDCS: A novel approach to augment language treatment post stroke. *Front Hum Neurosci*. 2016; 10: 695. Published online: 2017 Jan 12. doi: 10.3389/fnhum.2016.00695

212. G. Kronberg, M. Bridi, T. Abel, **M. Bikson**, L.C. Parra. Direct Current Stimulation Modulates LTP and LTD: Activity Dependence and Dendritic Effects. *Brain Stimul*. 2017 Jan - Feb;10(1):51-58. doi: 10.1016/j.brs.2016.10.001.

211. A. De Paolis, H. Watanabe, J.T. Nelson, **M. Bikson**, M. Packer, L. Cardoso. Human cochlear hydrodynamics: A high-resolution µCT-based finite element study. *J Biomech.* 2017 Jan 4; 50:209-216. doi: 10.1016/j.jbiomech.2016.11.020.

210. N. Khadka, A.L. Zannou, F. Zunura F, DQ Truong, J Dmochowski, **M Bikson**. Minimal heating at the Skin surface during transcranial direct current stimulation (tDCS). *Neuromodulation*. 2017 Jan 22. doi: 10.1111/ner.12554.

209. B. Lafon, A. Rahman, **M. Bikson**, LC. Parra. Direct current stimulation modulates LTP and LTD: activity dependence and dendritic effects. *Brain Stimul.* 2017 Jan - Feb;10(1):51-58. doi: 10.1016/j.brs.2016.10.001.

208. F. Ezquerro, A.H. Moffa, **M. Bikson**, N. Khadka, L.V. Aparicio, B. Sampaio-Junior, F. Fregni, I.M. Bensenor, P.A. Lotufo, A.C. Pereira, A.R. Brunoni. The influence of skin redness on blinding in transcranial direct current stimulation studies: a crossover trial. *Neuromodulation*. 2017 Apr;20(3):248-255. doi: 10.1111/ner.12527.

207. A. Alonzo, S. Aaronson, **M. Bikson**, H. Husain, S. Lisanby, D. Martin, S.M. McClintock, W.M. McDonald, J. O'Reardon, Z. Esmailpoor, C. Loo. Study design and methodology for a multicentre, randomised controlled trial of transcranial direct current stimulation as a treatment for unipolar and bipolar depression. *Contemp Clin Trials*. 2016 Nov; 51:65-71. doi: 10.1016/j.cct.2016.10.002.

206. S. Bai, V. Gálvez, S. Dokos, D. Martin, **M. Bikson**, C. Loo. Computational models of Bitemporal, Bifrontal and Right Unilateral ECT predict differential stimulation of brain regions associated with efficacy and cognitive side effects. *Eur Psychiatry*. 2017 Mar; 41:21-29. doi: 10.1016/j.eurpsy.2016.09.005.

205. M.V. Jog, R.X. Smith, K. Jann, W. Dunn, B. Lafon, D. Truong, A. Wu, L. Parra, **M. Bikson**, D.J. Wang. In-vivo Imaging of Magnetic Fields Induced by Transcranial Direct Current Stimulation (tDCS) in Human Brain using MRI. *Scientific Reports*. 2016 Sci Rep. 2016 Oct 4; 6:34385. doi: 10.1038/srep34385.

204. M. Teichmann, C. Lesoil, J. Godard, M. Vernet, A. Bertrand, R. Levy, B. Dubois, L. Lemoine, D.Q. Truong, **M. Bikson**, A. Kas, A. Valero-Cabré. Direct current stimulation over the anterior temporal areas boosts primary aphasia. *Annals of Neurology*. 2016; 80:693–707 doi: 10.1002/ana.24766

203. M.P. Jackson, A. Rahman, B. Lafon, G. Kronberg, D. Ling, L.C. Parra, **M. Bikson**. Animal Models of transcranial Direct Current Stimulation: Methods and Mechanisms. *Clin Neurophysiol*. 2016 Nov;127(11):3425-3454. doi: 10.1016/j.clinph.2016.08.016.

202. B. Lafon, A. Rahman, **M. Bikson**, L.C. Parra. Direct Current Stimulation alters neuronal input/output function. *Brain Stimul.* 2017 Jan - Feb;10(1):36-45. doi: 10.1016/j.brs.2016.08.014.

201. **M. Bikson**, B. Paneri, J. Giordano. The off-label use, utility and potential value of tDCS in the clinical care of particular neuropsychiatric conditions. *J Law Biosci*. 2016 Sep 10;3(3): 642-646. doi:10.1093/jlb/lsw044.

200. **M. Bikson**...A. Woods et al. Safety of Transcranial Direct Current Stimulation: Evidence Based Update 2016. *Brain Stimul*. 2016 Sep-Oct; 9(5):641-61. doi: 10.1016/j.brs.2016.06.004.

199. S. Babyar, T. Santos-Pontelli, T. Will-Lemos, S. Mazin, **M. Bikson**, D. Truong, D. Edwards M. Reding. Center of Pressure Speed Changes with tDCS versus GVS in Patients with

Lateropulsion after Stroke. *Brain Stimul.* 2016 Sep-Oct; 9(5):796-8. doi: 10.1016/j.brs.2016.06.053.

198. M. Cappiello, W. Xie, A. David, **M. Bikson**, W. Zhang, Transcranial Direct Current Stimulation Modulates Pattern Separation. *NeuroReport*. Aug 3;27(11):826-32. doi: 10.1097/WNR.0000000000000621. 2016

197. B. Paneri, D. Adair, C. Thomas, N. Khadka, V. Patel, W.J. Tyler, L. Parra, **M. Bikson**. Tolerability of Repeated Application of Transcranial Electrical Stimulation with Limited Outputs to Healthy Subjects. *Brain Stimul.* 2016 Sep-Oct;9(5):740-54. doi: 10.1016/j.brs.2016.05.008.

196. M. Alam, D.Q. Truong, N. Khadka, **M. Bikson**. Spatial and polarity precision of concentric high-definition transcranial direct current stimulation (HD-tDCS). *Phys Med Biol.* 2016 Jun 21;61(12):4506-21. doi: 10.1088/0031-9155/61/12/4506.

195. A. Cancelli, C. Cottone, F. Tecchio, D. Truong, J. Dmochowski, **M. Bikson**. A simple method for EEG guided transcranial Electrical Stimulation without models. *J Neural Eng.* 2016 Jun;13(3):036022. doi: 10.1088/1741-2560/13/3/036022.

194. M. Kasschau, J. Reisner, K. Sherman, **M. Bikson**, A. Datta, L.E. Charvet. Transcranial Direct Current Stimulation Is Feasible for Remotely Supervised Home Delivery in Multiple Sclerosis. *Neuromodulation*. 2016 Dec; 19(8):824-831. doi: 10.1111/ner.12430.

193. J. Hogeveen, J. Grafman, M Aboseria, A. David, **M. Bikson**, K.K. Hauner. Effects of high-definition and conventional tDCS on response inhibition. *Brain Stimul.* 2016 Sep-Oct; 9(5):720-9. doi: 10.1016/j.brs.2016.04.015.

192. B.M. Hampstead, E.M. Briceño, N. Mascaro, A. Mourdoukoutas, **M. Bikson**. Current Status of Transcranial Direct Current Stimulation in Posttraumatic Stress and Other Anxiety Disorders. *Curr Behav Neurosci Rep.* 2016 Jun; 3(2):95-101. doi: 10.1007/s40473-016-0070-9

191. T.E. Santos-Pontelli, B.P. Rimoli, D.B. Favoretto, S.C. Mazin, D.Q. Truong, J.P. Leite, O.M. Pontes-Neto, S.R. Babyar, M. Reding, **M. Bikson**, D.J. Edwards. Polarity-Dependent Misperception of Subjective Visual Vertical during and after Transcranial Direct Current Stimulation (tDCS). *PLoS One*. 2016 Mar 31;11(3): e0152331. doi: 10.1371/journal.pone.0152331

190. L. Castillo-Saavedra, N. Gebodh, **M. Bikson**, C. Diaz-Cruz, R. Brandao, L. Coutinho, D. Truong, A. Datta, R. Shani-Hershkovich, M. Weiss, I. Laufer, A. Reches, Z. Peremen, A. Geva, L.C. Parra, F. Fregni. Clinically Effective Treatment of Fibromyalgia Pain With High-Definition Transcranial Direct Current Stimulation: Phase II Open-Label Dose Optimization. *J Pain*. 2016 17(1):14-26. doi: 10.1016/j.jpain.2015.09.009.

189. A. J. Woods, A. Antal, **M. Bikson**, P.S. Boggio, A.R. Brunoni, P. Celnik, L.G. Cohen, D. Fregni, C.S. Herrmann, E.S. Kappenman, H. Knotkova, D. Liebetanz, C. Miniussi, P.C. Miranda, W. Paulus, A. Priori, D. Reato, C. Stagg, N. Wenderoth, M.A. Nitsche. A technical guide to tDCS, and related non-invasive brain stimulation tools. *Clin Neurophysiol*. 2016;127(2):1031-48. doi: 10.1016/j.clinph.2015.11.012.

188. D. Hä默er, J. Bonaiuto, M. Klein-Flügge, **M. Bikson**, S. Bestmann. Selective alteration of human value decisions with medial frontal tDCS is predicted by changes in attractor dynamics. *Sci Rep.* 2016 May 5; 6:25160. doi: 10.1038/srep25160.

187. M. Kasschau, K. Sherman, L. Haider, A. Frontario, M. Shaw, A. Datta, **M. Bikson**, L. Charvet L. A Protocol for the Use of Remotely-Supervised Transcranial Direct Current Stimulation (tDCS) in Multiple Sclerosis (MS). *J Vis Exp.* 2015 Dec 26;(106): e53542. doi: 10.3791/53542.

186. A. Rahman, B. Lafon, **M. Bikson**. Multilevel computational models for predicting the cellular effects of noninvasive brain stimulation. *Prog Brain Res.* 2015; 222:25-40. doi: 10.1016/bs.pbr.2015.09.003.

185. **M. Bikson**, D.Q. Truong, A.P. Moudoukoutas, M. Aboseria, N. Khadka, D. Adair, A. Rahman Modeling sequence and quasi-uniform assumption in computational neurostimulation. *Prog Brain Res.* 2015; 222:1-23 doi:10.1016/bs.pbr.2015.08.005. 2015

184. D.R. Dias, A.P. Trevizol, L.A. Miorin, **M. Bikson**, M. Aboseria, P. Shiozawa, Q. Cordeiro. Effect of Transcranial Direct Current Stimulation Protocol for Treating Depression Among Hemodialysis Patients: A Proof-of-Concept Trial. *J ECT.* 2016 Jun;32(2):e3-4. doi: 10.1097/YCT.0000000000000273.

183. L.C. Saavedra, N. Gebodh, **M. Bikson**, C. Diaz, R. Brandao, L. Coutinho, R. Shani-Hershkovich, M. Weiss, I. Laufer, A. Reches, Z. Peremen, A. Geva, L.C. Parra, D. Truong, F. Fregni. Clinically effective treatment of fibromyalgia pain with HD-tDCS – Phase II open-label dose-optimization. *J Pain.* 2016 Jan;17(1):14-26. doi: 10.1016/j.jpain.2015.09.009.

182. A.F. DaSilva, D.Q. Truong, M.F. DosSantos, R.L. Toback, A. Datta, **M. Bikson**. State-of-art neuroanatomical target analysis of high-definition and conventional tDCS montages used for migraine and pain control. *Front Neuroanat.* 2015 Jul 15; 9:89. doi: 10.3389/fnana.2015.00089

181. A. Donnell, T. Nascimento, M. Lawrence, V. Gupta, T. Zieba, D.Q. Truong, **M. Bikson**, A. Datta, E. Bellile, A.F. DaSilva. High-Definition and Non-Invasive Brain Modulation of Pain and Motor Dysfunction in Chronic TMD. *Brain Stimul.* 2015 Nov-Dec;8(6):1085-92. doi: 10.1016/j.brs.2015.06.008.

180. J. Xu, S.M. Healy, D.Q. Truong, A. Datta, **M. Bikson**, M.N. Potenza. A Feasibility Study of Bilateral Anodal Stimulation of the Prefrontal Cortex Using High-Definition Electrodes in Healthy Participants. *Yale J Biol Med.* 2015 Sep 3;88(3):219-25

179. G.S. Shekhawat, F. Sundram, **M. Bikson**, D. Truong, D.D. Ridder, I. Kirk, C.M. Stinear, D. Welch, G.D. Searchfield. Intensity, Duration, and Location of High-Definition Transcranial Direct Current Stimulation for Tinnitus Relief. *Neurorehabil Neural Repair.* 2016 May;30(4):349-59. doi: 10.1177/1545968315595286.

178. E.E. Galletta, A. Cancelli, C. Cottone, I. Simonelli, F. Tecchio, **M. Bikson**, P. Marangolo Use of computational modeling to inform tDCS electrode montages for the promotion of language recovery in post-stroke aphasia. *Brain Stimul.* 2015 Nov-Dec;8(6):1108-15. doi: 10.1016/j.brs.2015.06.018.

177. H. Knotkova, A.J. Woods, **M. Bikson**, M.A. Nitche. Transcranial Direct Current Stimulation (tDCS): What Pain Practitioners Need to Know. *Practical Pain Management.* 2015; 15(3).

176. M. Kurimori, **M. Bikson**, M. Aboseria; R.R. Uchida, Q. Cordeiro. Targeting negative symptoms in schizophrenia: results from a proof-of-concept trial assessing prefrontal anodic tDCS protocol. *Schizophr Res.* 2015 Aug; 166(1-3):362-3. doi: 10.1016/j.schres.2015.05.029

175. K.T. Jones, J.A. Stephens, M. Alam, **M. Bikson**, M.E. Berryhill. Longitudinal Neurostimulation in Older Adults Improves Working Memory. *PLoS One*. 2015 Apr 7;10(4): e0121904. doi: 10.1371/journal.pone.0121904.

174. N. M. Senço, Y. Huang, G. D'Urso, L. C. Parra, **M. Bikson**, A. Mantovani, M. Q. Hoexter, R. G. Shavitt, A. R. Brunoni. TDCS in Obsessive Compulsive Disorder: Emerging Clinical Evidence and Considerations for Optimal Montage of Electrodes. *Expert Rev Med Devices*. 2015 Jul;12(4):381-91. doi: 10.1586/17434440.2015.1037832.

173. A.J. Woods, R. Hamilton, A. Kranjec, P. Minhaus, **M. Bikson**, J. Yu, A. Chatterjee. Exploring structure-function relationships using parallel fMRI and tDCS. *Brain Stimul*. 2014 Mar-Apr;7(2): e9. doi: 10.1016/j.brs.2014.01.033.

172. L. Charvet, M. Kasschau, A. Datta, H. Knotkova, M. C. Stevens, A. Alonzo, C. Loo, K.R. Krull, **M. Bikson**. Remotely-Supervised Transcranial Direct Current Stimulation (tDCS) for Clinical Trials: Guidelines for Technology and Protocols. *Front. Syst. Neurosci*. 2015 Mar 17; 9:26. doi: 10.3389/fnsys.2015.00026.

171. W. Song, D. Truong, **M. Bikson**, J.H. Martin. Trans-spinal direct current stimulation immediately modifies motor cortex sensorimotor maps. *J Neurophysiol*. 2015 Apr 1;113(7):2801-11. doi: 10.1152/jn.00784.2014.

170. O. Seibt, A.R. Brunoni, Y. Huang, **M. Bikson**. The pursuit of DLPFC: Non-neuronavigated methods to target the left dorsolateral prefrontal cortex with symmetric bicephalic transcranial Direct Current Stimulation (tDCS). *Brain Stimul*. 8(3):590-602. doi: 10.1016/j.brs.2015.01.401

169. L.H. Grecco, S. Li, S. Michel, L. Castillo-Saavedra, A. Mourdoukoutas, **M. Bikson**, F. Fregni. Transcutaneous Spinal Stimulation as a therapeutic strategy for spinal cord injury: State of the art. *Journal of Neurorestoratology* 2015 March 23; 3:73—82. doi: 10.2147/JN.S77813.

168. A.R. Brunoni, **M. Bikson** et al. The Escitalopram versus Electric Current Therapy to treat Depression Clinical Study (ELECT-TDCS): rationale and study design of a non-inferiority, triple-arm, placebo-controlled clinical trial. *São Paulo Med J*. 2015; 133(3):252-63.

167. D. Reato, **M. Bikson**, L. Parra. Lasting modulation of in-vitro oscillatory activity with weak direct current stimulation. *Journal of Neurophysiology* 2015 Mar 1;113(5):1334-41. doi: 10.1152/jn.00208.2014.

166. N. Khadka, A. Rahman, C. Sarantos, D.Q. Truong, **M. Bikson**. Methods for Specific Electrode Resistance Measurement during Transcranial Direct Current Stimulation. *Brain Stimul*. 2015 Jan-Feb;8(1):150-9. doi: 10.1016/j.brs.2014.10.004.

165. B.R. Foerster, T. Nascimento, M. DeBoer, M Bender, I Rice, D. Truong, **M. Bikson**, D. Clauw, J. Zubieta, R. Harris, A. DaSilva. Excitatory and Inhibitory Brain Metabolites as Targets and Predictors of Effective Motor Cortex tDCS Therapy in Fibromyalgia. *Arthritis Rheumatol*. 2015 Feb; 67(2):576-81. doi: 10.1002/art.38945

164. F. Fregni, M. A. Nitsche, C. K. Loo, ... **M. Bikson** Et al. Regulatory Considerations for the Clinical and Research Use of Transcranial Direct Current Stimulation (tDCS): review and recommendations from an expert panel. *Clin Res Regul Aff*. 2015 Mar 1;32(1):22-35.

163. M. Scheldrup, P.M. Greenwood, R. Kendrick, J. Strohl, **M. Bikson**, M. Alam, R.A. McKinley, R. Parasuraman. Transcranial direct current stimulation facilitates cognitive

multi-task performance differentially depending on anode location and subtask. *Front Hum Neurosci.* 2014 Sep 8; 8:665. doi: 10.3389/fnhum.2014.00665.

162. M.F. DosSantos, L.K. Martikainen, T.D. Nascimento, T.M. Love, M.D. DeBoer, H.M. Schambra, **M. Bikson**, J. Zubieta, A.F. DaSilva. Building up Analgesia in Humans via the Endogenous μ -Opioid System by Combining Placebo and Active tDCS: A Preliminary Report. *PLoS One.* 2014 Jul 16;9(7): e102350. doi: 10.1371/journal.pone.0102350.

161. J.D. Richardson, P. Fillmore, A. Datta, D. Truong, **M. Bikson**, J. Fridriksson. Toward Development of Sham Protocols for High- Definition Transcranial Direct Current Stimulation (HD-tDCS). *NeuroRegulation.* 2014; 1(1): 62-72. doi: 10.15540/nr.2014.1.1.62.

160. B. Guleyupoglu, N. Febles, P. Minhas, C. Hahn, **M. Bikson**. Reduced discomfort during High-Definition transcutaneous stimulation using 6% benzocaine. *Front Neuroeng.* 2014 Jul 11; 7:28. doi: 10.3389/fneng.2014.00028.

159. F. Guarienti, W. Caumo, P. Shiozawa, Q. Cordeiro, P.S. Boggio, I.M. Benseñor, P.A. Lotufo, **M. Bikson**, A.R. Brunoni. Reducing transcranial direct current stimulation (tDCS)-induced erythema with skin pretreatment: considerations for sham-controlled tDCS clinical trials. *Neuromodulation: Technology at the Neural Interface.* Neuromodulation. 2014. doi: 10.1111/ner.12230.

158. D.Q. Truong, M. Huber, X. Xie, A. Datta, A. Rahman, L.C. Parra, J. Dmochowski, **M. Bikson**. Clinician accessible tools for GUI computational models of transcranial electrical stimulation: BONSAI and SPHERES. *Brain Stimul.* 2014; 7(4): 521-4. doi: 10.1016/j.brs.2014.03.009

•Cover

157. A.R. Brunoni, P. Shiozawa, D. Truong, D.C. Javitt, H. Elkis, F. Fregni, **M. Bikson**. Understanding tDCS effects in schizophrenia: a systematic review of clinical data and an integrated computation modeling analysis. *Expert Rev Med Devices.* 2014 Jul;11(4):383-94. doi: 10.1586/17434440.2014.911082.

156. P. Toshev, B. Guleyupoglu, **M. Bikson**. Informing dose design by modeling transcutaneous spinal direct current stimulation. *Clin Neurophysiol.* 2014 Nov;125(11):2147-9. doi: 10.1016/j.clinph.2014.03.022.

155. S.S. Shahid, **M. Bikson**, P. Wen, T. Ahfock. The value and cost of complexity in predictive modeling: role of tissue anisotropic conductivity and fibre tracts in neuromodulation. *J Neural Eng.* 2014 Jun;11(3):036002. doi: 10.1088/1741-2560/11/3/036002.

154. A.J. Woods, R.H. Hamilton, A. Kranjec, P. Minhas, **M. Bikson**, J. Yu, A. Chatterjee. Space. Time, and Causality in the Human Brain. *Neuroimage.* 2014 May 15; 92:285-97. doi: 10.1016/j.neuroimage.2014.02.015.

153. A.L. Manuel, A.W. David, **M. Bikson**, A. Schnider. Frontal tDCS modulates orbitofrontal reality filtering. *Neuroscience.* 2014 Apr 18; 265:21-7. doi: 10.1016/j.neuroscience.2014.01.052.

152. A. Rahman, P.L. Toshev, **M. Bikson**. Polarizing cerebellar neurons with transcranial Direct Current Stimulation. *Clin Neurophysiol.* 2014 Mar;125(3):435-8. doi: 10.1016/j.clinph.2013.10.003.

151. S.A. Weiss, G. McKhann, R. Goodman, R.G. Emerson, A. Trevelyan, **M. Bikson**, C.A. Schevon. Field effects and ictal synchronization: insights from in homine observations. *Front Hum Neurosci.* 2013 Dec 5; 7:828. doi: 10.3389/fnhum.2013.00828.

150. B.T. Gillick, A. Kriton, J. Carmel, P. Minhas, **M. Bikson**. Pediatric Stroke and tDCS: Methods for Individualized Dose Optimization. *Front Hum Neurosci.* 2014 Sep 19; 8:739. doi: 10.3389/fnhum.2014.00739.

149. D. Reato, A. Rahman, **M. Bikson**, L.C. Parra. Effects of weak transcranial Alternating Current Stimulation on brain activity – a review of known mechanisms from animal studies. *Front Hum Neurosci.* 2013 Oct 23;7:687. doi: 10.3389/fnhum.2013.00687.

148. A.O. Berker, **M. Bikson**, S. Bestmann. Predicting the behavioural impact of transcranial direct current stimulation: issues and limitations. *Front Hum Neurosci.* 2013 Oct 4; 7:613. doi: 10.3389/fnhum.2013.00613.

•F100 prime selection

147. A. Rahman, **M. Bikson**. Origins of specificity during tDCS: anatomical, activity-selective, and input-bias mechanisms. *Front Hum Neurosci.* 2013 Oct 21; 7:688. doi: 10.3389/fnhum.2013.00688.

146. B. Guleyupoglu, P. Schestatsky, D. Edwards, F. Fregni, **M. Bikson**. Classification of methods in transcranial Electrical Stimulation (tES) and evolving strategy from historical approaches to contemporary innovations. *J Neurosci Methods.* 2013 Oct 15;219(2): 297-311. doi: 10.1016/j.jneumeth.2013.07.016.

145. S.K. Kessler, A.J. Woods, P. Minhas, A.R. Rosen, C. Gorman, **M. Bikson**. Dosage considerations for transcranial direct current stimulation in children: a computational modeling study. *PLoS One.* 2013 Sep 27;8(9): e76112. doi: 10.1371/journal.pone.0076112.

144. A. Rahman, D. Reato, M. Arlotti, F. Gasca, A. Datta, L.C. Parra, **M. Bikson**. Cellular Effects of Acute Direct Current Stimulation: Somatic and Synaptic Terminal Effects. *J Physiol.* 2013 May 15;591(10):2563-78. doi: 10.1113/jphysiol.2012.247171.

•Cover

143. D.Q Truong, G. Magerowski, G.L. Blackburn, **M. Bikson**, M. Alonso-Alonso. Computational modeling of transcranial direct current stimulation (tDCS) in obesity: impact of head fat and dose guidelines. *Neuroimage Clin.* 2013 May 31;2: 759-66. doi: 10.1016/j.nicl.2013.05.011.

142. A. Datta, X. Zhou, Y. Su, L.C. Parra, **M. Bikson**. Validation of finite element model of transcranial electrical stimulation using scalp potentials: implications for clinical dose. *J Neural Eng.* 2013 Jun;10(3):036018. doi: 10.1088/1741-2560/10/3/036018.

141. I. Moreno-Duarte, L.R. Morse, M. Alam, **M. Bikson**, R. Zafonte, F. Fregni. Targeted therapies using electric and magnetic neural stimulation for the treatment of chronic pain in spinal cord injury. *Neuroimage.* 2014 Jan 15;85 Pt 3:1003-13. doi: 10.1016/j.neuroimage.2013.05.097.

140. A.H. Okano, E.B. Fontes, R.A. Montenegro, P.V. Farinatti, E.S. Cyrino, L.L. Min, **M. Bikson**, T.D. Noakes. Brain stimulation modulates the autonomic nervous system, rating of perceived exertion and performance during maximal exercise. *Br J Sports Med.* 2015 Sep;49(18):1213-8. doi: 10.1136/bjsports-2012-091658.

139. D. Edwards, M. Cortes, A. Datta, P. Minhas, E.M. Wassermann, **M. Bikson**. Physiological and modeling evidence for focal transcranial electrical brain stimulation in humans: a basis for high-definition tDCS. *Neuroimage*. 2013 Jul 1; 74:266-75. doi: 10.1016/j.neuroimage.2013.01.042.

138. J. Dmochowski, A. Datta, Y. Huang, J. Richardson, **M. Bikson**, J. Fridriksson, L.C. Parra. Targeted Transcranial Direct Current Stimulation for Rehabilitation after Stroke. *Neuroimage*. 2013 Jul 15; 75:12-9. doi: 10.1016/j.neuroimage.2013.02.049.

137. E.G. Chrysikou, R.H. Hamilton, H.B. Coslett, A. Datta, **M. Bikson**, S.L. Thompson-Schill. Non-invasive transcranial direct current stimulation over the left prefrontal cortex facilitates cognitive flexibility in tool use. *Cogn Neurosci*. 2013;4(2):81-9. doi:10.1080/17588928.2013.768221

136. A. Datta, J. Dmochowski, B. Guleyupoglu, **M. Bikson**, F. Fregni. Cranial Electrotherapy Stimulation and transcranial Pulsed Current Stimulation: A computer based high-resolution modeling study. *Neuroimage*. 2013 Jan 15; 65:280-7. doi: 10.1016/j.neuroimage.2012.09.062.

135. M. F. Villamar, P. Wivatvongvana, J. Patumanond, **M. Bikson**, D.Q. Truong, A. Datta, F. Fregni. Focal modulation of primary motor cortex in Fibromyalgia using 4x1-Ring High-Definition Transcranial Direct Current Stimulation (HD-tDCS): Immediate and delayed analgesic effects of cathodal and anodal stimulation. *J Pain*. 2013 Apr;14(4):371-83. doi: 10.1016/j.jpain.2012.12.007.

•Cover

134. D. Reato, F. Gasca, A. Datta, **M. Bikson**, L. Marshall, L.C. Parra. Transcranial electrical stimulation accelerates human sleep homeostasis. *PLoS Comput Biol*. 2013;9(2): e1002898. doi: 10.1371/journal.pcbi.1002898.

133. M.F. Villamar, M.S. Volz, A. Datta, **M. Bikson**, A.F. DaSilva, F. Fregni. Technique and Considerations in the Use of 4x1 Ring High-definition Transcranial Direct Current Stimulation (HD-tDCS). *J Vis Exp*. 2013 Jul 14;(77): e50309. doi: 10.3791/50309.

132. C. Hahn, J. Rice, S. Macuff, P. Minhas, A. Rahman, **M. Bikson**. Methods for extra-low voltage transcranial Direct Current Stimulation: Current and time dependent impedance decreases. *Clin Neurophysiol*. 2013 Mar;124(3):551-6. doi: 10.1016/j.clinph.2012.07.028.

131. H.I. Kuo, A. Datta, **M. Bikson**, P. Minhas, W. Paulus, M.F. Kuo, M.A. Nitsche Comparing cortical plasticity induced by conventional and high-definition 4x1 ring tDCS: a neurophysiological study. *Brain Stimul*. 2013 Jul;6(4):644-8. doi: 10.1016/j.brs.2012.09.010.

130. A. Datta, D. Troung, P. Minhas, L.C. Parra, **M. Bikson**. Inter-individual variation during transcranial Direct Current Stimulation and normalization of dose using MRI-derived computational models. *Front Psychiatry*. 2012 Oct 22; 3:91. doi: 10.3389/fpsyg.2012.00091.

129. A. Antal, **M. Bikson**, A. Datta, B. Lafon, P. Dechent, L.C. Parra, W. Paulus. Imaging artifacts induced by electrical stimulation during conventional fMRI of the brain. *Neuroimage*. 2014 Jan 15;85 Pt 3:1040-7. doi: 10.1016/j.neuroimage.2012.10.026.

•Special Issue Cover

128. A.O. De Berker, **M. Bikson**, S. Bestmann. Predicting the behavioural impact of transcranial direct current stimulation: issues and limitations. *Front Hum Neurosci*. 2013 Oct 4;7:613. doi: 10.3389/fnhum.2013.00613.

127. J.P. Dmochowski, **M. Bikson**, L.C. Parra. The point spread function of the human head and its implications for transcranial current stimulation. *Phys Med Biol.* 2012 Oct 21;57(20):6459-77. doi: 10.1088/0031-9155/57/20/6459

126. J. Medina, J. Beauvais, A. Datta, **M. Bikson**, H.B. Coslett, R.H. Hamilton. Transcranial direct current stimulation accelerates allocentric target detection. *Brain Stimul.* 2013 May;6(3):433-9. doi: 10.1016/j.brs.2012.05.008.

125. M. Elwassif, A. Datta, A. Rahman, **M. Bikson**. Temperature control at DBS electrodes using a heat sink: experimentally validated FEM model of DBS lead architecture. *J Neural Eng.* 2012 Aug;9(4):046009. doi: 10.1088/1741-2560/9/4/046009.

124. J.J. Borckardt, **M. Bikson**, H. Frohman, S.T. Reeves, A. Datta, V. Bansal, A. Madan, K. Barth, M.S. George. A Pilot Study of the Tolerability and Effects of High-Definition Transcranial Direct Current Stimulation (HD-tDCS) on Pain Perception. *J Pain.* 2012 Feb;13(2):112-20. doi: 10.1016/j.jpain.2011.07.001.

123. A.F. DaSilva, M.E. Mendonca, S. Zaghi, M. Lopes, M.F. Dossantos, E.L. Spierings, Z. Bajwa, A. Datta, **M. Bikson**, F. Fregni. tDCS-Induced Analgesia and Electrical Fields in Pain-Related Neural Networks in Chronic Migraine. *Headache.* 2012 Sep;52(8):1283-95. doi: 10.1111/j.1526-4610.2012.02141.x.

• Feature

122. P.E. Turkeltaub, J. Benson, R.H. Hamilton, A. Datta, **M. Bikson**, H.B. Coslett. Left lateralizing transcranial direct current improves reading efficiency. *Brain Stimul.* 2012 Jul;5(3):201-7. doi: 10.1016/j.brs.2011.04.002.

121. A.F. Dasilva, M.S. Volz, **M. Bikson**, F. Fregni. Electrode positioning and montage in transcranial direct current stimulation. *J Vis Exp.* 2011 May 23;(51). pii: 2744. doi: 10.3791/2744.

120. M. Halko, A. Datta, E. Plow, J. Scaturro, **M. Bikson**, L. Merabet. Neuroplastic changes following rehabilitative training correlate with regional electrical field induced with tDCS. *Neuroimage.* 2011 Aug 1;57(3):885-91. doi: 10.1016/j.neuroimage.2011.05.026.

119. J.P. Dmochowski, A. Datta, **M. Bikson**, Y. Su, L.C. Parra. Optimized multi-electrode stimulation increases focality and intensity at target. *J Neural Eng.* 2011 Aug;8(4):046011. doi: 10.1088/1741-2560/8/4/046011.

118. M.E. Mendonca, M.B. Santana, A.F. Baptista, A. Datta, **M. Bikson**, F. Fregni, C.P. Araujo. Transcranial DC Stimulation in Fibromyalgia: Optimized cortical target supported by high-resolution computational models. *J Pain.* 2011 May;12(5):610-7. doi: 10.1016/j.jpain.2010.12.015.

• Cover

117. S.V. Lopez-Quitero, A. Datta, R. Amaya, M. Elwassif, **M. Bikson**, J.M. Tarbell. DBS-relevant electric fields increase hydraulic conductivity of in vitro endothelial monolayers. *J Neural Eng.* 2010 Feb;7(1):16005. doi: 10.1088/1741-2560/7/1/016005.

116. A. Datta, J. Baker, **M. Bikson**, J. Fridriksson. Individualized model predicts brain current flow during transcranial direct-current stimulation treatment in responsive stroke patient. *Brain Stimul.* 2011 Jul;4(3):169-74. doi: 10.1016/j.brs.2010.11.001.

115. P. Minhas, A. Datta, **M. Bikson**. Cutaneous perception during tDCS: role of electrode shape and salinity. *Clin Neurophysiol.* 2011 Apr;122(4):637-8. doi: 10.1016/j.clinph.2010.09.023.

114. D. Reato, A. Rahman, **M. Bikson**, L. Parra. Low-intensity electrical stimulation affects network dynamics by modulating population rate and spike timing. *J Neurosci*. 2010 Nov 10;30(45):15067-79. doi: 10.1523/JNEUROSCI.2059-10.2010.

113. E.L. Servais, N.P. Rizk, L.O. McGwyver, V.W. Rusch, **M. Bikson**, P.S. Adusumilli. Real-time intraoperative detection of tissue hypoxia in gastrointestinal surgery by Wireless Pulse Oximetry (WiPOX). *Surg Endosc*. 2011 May;25(5):1383-9. doi: 10.1007/s00464-010-1372-8.

112. A. Datta, A. Rahman, J. Scaturro, **M. Bikson**. Electrode montages for tDCS and weak transcranial electrical stimulation Role of "return" electrode's position and size. *Clin Neurophysiol*. 2010 Dec;121(12):1976-8. doi: 10.1016/j.clinph.2010.05.020.

111. P. Minhas, J. Patel, V. Bansal, J. Ho, A. Datta, **M. Bikson**. Electrodes for high-definition transcutaneous DC stimulation for applications in drug-delivery and electrotherapy, including tDCS. *J Neurosci Methods*. 2010 Jul 15;190(2):188-97. doi: 10.1016/j.jneumeth.2010.05.007.

110. A. Datta, **M. Bikson**, F. Fregni. Transcranial direct current stimulation in patients with skull defects and skull plates: High-resolution computational FEM study of factors altering cortical current flow. *Neuroimage*. 2010 Oct 1;52(4):1268-78. doi: 10.1016/j.neuroimage.2010.04.252.

109. T. Radman, R.L. Ramos, J.C. Brumberg, **M. Bikson**. Role of Cortical Cell Type and Morphology in Sub- and Suprathreshold Uniform Electric Field Stimulation. *Brain Stimul*. 2009 Oct;2(4):215-28, 228.e1-3. doi: 10.1016/j.brs.2009.03.007.

108. A. Datta, V. Bansal, J. Diaz, J. Patel, D. Reato, **M. Bikson**. Gyri –precise head model of transcranial DC stimulation: Improved spatial focality using a ring electrode versus conventional rectangular pad. *Brain Stimul*. 2009 Oct 1; 2(4): 201–207. doi: 10.1016/j.brs.2009.03.005.

- Cover
- Most cited original article in Brain Stim Jnl

107. Y. Su, T. Radman, J. Vaynshteyn, L.C. Parra, **M. Bikson**. Effects of high-frequency stimulation on epileptiform activity in vitro: ON/OFF control paradigm. *Epilepsia*. 2008 Sep;49(9):1586-93. doi: 10.1111/j.1528-1167.2008.01592.x.

106. A. Datta, M. Elwassif, F. Battaglia, **M. Bikson**. Transcranial current stimulation focality using disc and ring electrode configurations: FEM analysis. *J Neural Eng*. 2008 Jun;5(2):163-74. doi: 10.1088/1741-2560/5/2/007.

105. J.H. An, T. Radman, Y. Su, **M. Bikson**. Effects of glucose and glutamine concentration in the formulation of the artificial cerebrospinal fluid (ACSF). *Brain Res*. 2008 Jul 7; 1218:77-86. doi: 10.1016/j.brainres.2008.04.007.

104. T. Radman, Y. Su, J.H. An, L. Parra, **M. Bikson**. Spike timing amplifies the effect of electric fields on neurons: Implications for endogenous field effects. *J Neurosci*. 2007 Mar 14;27(11):3030-6. doi: 10.1523/JNEUROSCI.0095-07.2007

103. J.E. Fox, **M. Bikson**, J.G. Jefferys. The effect of neuronal population size on the development of epileptiform discharges in the low calcium model of epilepsy. *Neurosci Lett*. 2007 Jan 10;411(2):158-61. doi: 10.1016/j.neulet.2006.10.021

102. M.M. Elwassif, Q. Kong, M. Vazquez, **M. Bikson**. Bio-heat transfer model of deep brain stimulation-induced temperature changes. *Conf Proc IEEE Eng Med Biol Soc*. 2006;1: 3580-3. doi: 10.1109/IEMBS.2006.259425

101. J.E. Fox, **M. Bikson**, J.G.R. Jefferys. Tissue resistance changes and the profile of synchronized neuronal activity during ictal events in the low-calcium model of epilepsy. *J Neurophysiol.* 2004 Jul;92(1):181-8. doi: 10.1152/jn.00123.2004

100. **M. Bikson**, C. McIntyre, M. Inoue, H. Akiyama, J.K. Deans, J.E. Fox, H. Miyakawa, J.G.R. Jefferys. Effects of uniform extracellular DC electric fields on excitability in rat hippocampal slices in vitro. *J Physiol.* 2004 May 15;557(Pt 1):175-90. doi: 10.1113/jphysiol.2003.055772

•Cover

99. **M. Bikson**, P.J. Hahn, J.E. Fox, J.G.R. Jefferys. Depolarization block of neurons during maintenance of electrographic seizures. *J Neurophysiol.* 2003 Oct;90(4):2402-8. doi: 10.1152/jn.00467.2003

98. J. Shuai, **M. Bikson**, J. Lian, P.J. Hahn, D.M. Durand. Ionic mechanisms underlying spontaneous CA1 neuronal firing in Ca²⁺-Free Solution. *Biophys J.* 2003 Mar;84(3):2099-111. doi: 10.1016/S0006-3495(03)75017-6

97. J. Lian, **M. Bikson**, C. Sciortino, W.C. Stacey, D.M. Durand. Local suppression of epileptiform activity by Electrical Stimulation in Rat Hippocampus In Vitro. *J Physiol.* 2003 Mar 1;547(Pt 2):427-34.

•Comment in Epilepsy Currents. 2003; 3:137-138

96. **M. Bikson**, J.E. Fox, J.G.R. Jefferys. Neuronal aggregate formation underlies spatiotemporal dynamics of nonsynaptic seizure initiation. *J Neurophysiol.* 2003 Apr;89(4):2330-3. doi: 10.1152/jn.00764.2002

95. **M. Bikson**, R. Id Bihi, M. Vreugdenhil, R. Kohling, J.E. Fox, J.G.R. Jefferys. Quinine suppresses extracellular potassium transients and ictal epileptiform activity without decreasing neuronal excitability in vitro. *Neuroscience.* 2002;115(1):251-61. doi: 10.1016/S0306-4522(02)00320-2

94. J. Lian, **M. Bikson**, J. Shuai, D.M. Durand. Propagation of non-synaptic epileptiform activity across a lesion in rat hippocampal slices. *J Physiol.* 2001 Nov 15;537(Pt 1):191-9. doi:10.1111/j.1469-7793.2001.0191k.x

93. **M. Bikson**, S.C. Baraban, D.M. Durand. Conditions sufficient for non-synaptic epileptogenesis in the CA1 region of rat hippocampal slices. *J Neurophysiol.* 2002 Jan;87(1):62-71. doi: 10.1152/jn.00196.2001

92. **M. Bikson**, J. Lian, P.J. Hahn, W.C. Stacey, C. Sciortino, D.M. Durand. Suppression of epileptiform activity by high frequency sinusoidal fields in rat hippocampal slices. *J Physiol.* 2001 Feb 15; 531(Pt 1): 181–191. doi: 10.1111/j.1469-7793.2001.0181j.x.

91. R. Ghai, **M. Bikson**, D.M. Durand. Effects of applied electric fields on low-calcium epileptiform activity in the CA1 region of rat hippocampal slices. *J Neurophysiol.* 2000 Jul;84(1):274-80. doi: 10.1152/jn.2000.84.1.274

90. **M. Bikson**, R.S. Ghai, S.C. Baraban, D.M. Durand. Modulation of burst frequency, duration, and amplitude in the zero-Ca²⁺ model of epileptiform activity. *J Neurophysiol.* 1999 Nov;82(5):2262-70. doi: 10.1152/jn.1999.82.5.2262.

Reviews/Book Chapters/Letters-to-editor/Editorials:

89. J Douglas Bremner; Asim H Gazi; Tamara P Lambert; Afra Nawar; Anna B Harrison; Justine W Welsh; Viola Vaccarino; Kevin M Walton; Nora Jaquemet; Kellen Mermin-Bunnell; Hewitt Mesfin; Trinity A Gray; Keyatta Ross; Georgia Saks; Nikolina Tomic; Danner Affadzi; **Marom Bikson**; Amit J Shah; Kelly E Dunn; Nicholas A Giordano; Omer T Inan. (2023) Ann Depress Anxiety. 10(1): 1117.

88. **M Bikson**. Transcranial direct current stimulation and neurovascular modulation. (2023) European Journal of Neurology (commentary). DOI: 10.1111/ene.15710

87. N. Khadka, **M. Bikson** (2022) Noninvasive Electrical Brain Stimulation of the Central Nervous System. Handbook of Neuroengineering. Springer Nature. DOI: doi.org/10.1007/978-981-15-2848-4_59-1

86. S.L. Cohen, **M. Bikson**, B.W. Badran, M.S. George. A visual and narrative timeline of US FDA milestones for Transcranial Magnetic Stimulation (TMS) devices. *Brain Stimul.* 2021 Nov 11;15(1):73-75. doi: 10.1016/j.brs.2021.11.010. Epub ahead of print. PMID: 34775141.

85. F. Farahani, M. Sharma, L.C. Parra, **M. Bikson** (2021) Animal Models of tES: Methods, Techniques, and Safety. In: Brunoni A.R., Nitsche M.A., Loo C.K. (eds) Transcranial Direct Current Stimulation in Neuropsychiatric Disorders. Springer, Cham.
https://doi.org/10.1007/978-3-030-76136-3_4

84. M. Sharma, F. Farahani, **M. Bikson**, L.C. Parra, A. Brunoni, M. Nitsche, C. Loo. Animal Studies on the Mechanisms of Low-Intensity Transcranial Electric Stimulation in Transcranial Direct Current Stimulation in Neuropsychiatric Disorders (Eds.), Springer, Chapter 6, 2021.

83. F. Farahani, M. Sharma, L.C. Parra, **M. Bikson**, A. Brunoni, M. Nitsche, C. Loo. Animal Models of tES: Methods, Techniques and Safety, in Transcranial Direct Current Stimulation in Neuropsychiatric Disorders (Eds.), Springer, Chapter 5, 2021.

82. D.Q. Truong, N. Khadka., **M. Bikson**. Transcranial Electrical Stimulation in Neural Engineering, ed. Bin He. Springer 2020. p271-292. doi:
<https://doi.org/10.1007/978-3-030-43395-6>

81. H. Knotkova, M.A. Nitsche, **M. Bikson**, & A.J. Woods. (Eds.). (2019). Practical Guide to Transcranial Direct Current Stimulation. Springer International Publishing.
<https://doi.org/10.1007/978-3-319-95948-1>

80. B.W. Badran, J.C. Brown, L.T. Dowdle, O.J. Mithoefer, N.T. LaBate, J. Coatsworth, W.H. DeVreis, C.W. Austelle, L.M. McTeague, A. Yu, **M. Bikson**, D.D. Jenkins, M.S. George. Tragus or cymba conchae? Investigating the anatomical foundation of transcutaneous auricular vagus nerve stimulation (taVNS). *Brain Stim* 2018 June 06, doi: 10.1016/j.brs.2018.06.003

79. G. Unal, **M. Bikson**. Transcranial Direct Current Stimulation (tDCS). Chapter in Neuromodulation. Comprehensive Textbook of Principles, Technologies, and Therapies. 2nd ed. (Ellior S. Krames, P. Hunter Peckham, Ali R. Rezai) Academic Press. ISBN: 978-0-12-805353-9, 2018, pp. 1589-1610

78. **M. Bikson**, G. Unal, A. Brunoni, C.Loo. Special Reports: What psychiatrists need to know about Transcranial Direct Current Stimulation. *Psychiatric Times*. 2017 October 24.

77. M.P.Jackson, **M. Bikson**, D. Liebetanz, M. Nitsche, Toward comprehensive tDCS safety standards. *Brain Behav. Immun.* Nov 2017; Letter to the Editor. 66:413. doi: 10.1016/j.bbi.2017.08.007

76. E.G. Chrysikou, M.E. Berryhill, **M. Bikson**, H.B. Coslett. Editorial: Revisiting the Effectiveness of Transcranial Direct Current Brain Stimulation for Cognition: Evidence, Challenges, and Open Questions. *Front Hum Neurosci.* 2017 Sep 8; 11:448. doi: 10.3389/fnhum.2017.00448.

75. **M. Bikson**, P. Grossman, A.L. Zannou, A.J. Woods. Response to letter to the editor: Safety of transcranial direct current stimulation: Evidence based update 2016. *Brain Stimul.* 2017 Sep-Oct; 10(5): 986-987. doi: <https://doi.org/10.1016/j.brs.2017.06.007>.

74. E.G. Chrysikou, M. Berryhill, **M. Bikson** and H.B. Coslett. Editorial: Revisiting the Effectiveness of Transcranial Direct Current Brain Stimulation for Cognition: Evidence, Challenges, and Open Questions. *Front. Hum. Neurosci.* 2017 Aug. doi: 10.3389/fnhum.2017.00448

73. J. Dmochowski, **M. Bikson** Noninvasive Neuromodulation Goes Deep", *Cell*. <http://dx.doi.org/10.1016/j.cell.2017.05.017>

72. M. Nitsche. **M. Bikson**. Extending the parameter range for tDCS: Safety and tolerability of 4 mA stimulation. *Brain Stimulation*. Editorial, Volume 10, Issue 3, Page 541–542, 2017.

71. D.Q. Truong. D. Adair, **M. Bikson**. Computer-based models of tDCS of tACS in *Transcranial Direct Current Stimulation in Neuropsychiatric Disorders: Clinical Principles* ed. M. Nitsche, C. Loo and A. Brunoni 2016 10.1007/978-3-319-33967-2_5, Page 47-66.

70. D. Ling, A. Rahman, M. Jackson **M. Bikson**. Animal studies in the field of transcranial electric stimulation in *Transcranial Direct Current Stimulation in Neuropsychiatric Disorders: Clinical Principles* M. Nitsche, C. Loo and A. Brunoni 2016 10.1007/978-3-319-33967-2_5, Page 67-83.

69. J.S. Gomes, P. Shiozawa, Á.M. Dias, D. Valverde, H.T. Akiba, A.P. Trevizol, **M. Bikson**, M. Aboseria, A. Gadelha, A.T. Lacerda, Q. Cordeiro. Left Dorsolateral Prefrontal Cortex Anodal tDCS Effects on Negative Symptoms in Schizophrenia Brain Stimulation. Letter-to-the-editor in press 2015

68. M. Nitsche, **M. Bikson**, S. Bestmann. On the use of meta-analysis in neuromodulatory non-invasive brain stimulation. *Brain Stimulation*. Letter-to-the-editor in press 2015

67. **M. Bikson**, D. Edwards, E. Kappenman. The outlook for non-invasive brain stimulation. *Brain Stimul.* 2014 Nov-Dec;7(6):771-2. doi: 10.1016/j.brs.2014.10.005.

66. **M. Bikson**, J. Dmochowski, A. Rahman. The “Quasi-Uniform” Assumption in Animal and Computational Models of Non-Invasive Electrical Stimulation. *Brain Stimul.* 2013 Jul; Letter to the Editor. 6(4): 704–705.

65. H.M. Schambra, **M. Bikson**, T.D. Wager, M.F. DosSantos, A.F. DaSilva. It's all in your head: reinforcing the placebo response with tDCS. *Brain Stimul.* 2014 Jul-Aug; Letter-to-the-editor. 7(4): 623–624.

64. S.A. Weiss, **M. Bikson**. Open questions on the mechanisms of neuromodulation with applied and endogenous electric fields. *Front Hum Neurosci.* 2014; 8: 227. doi: 10.3389/fnhum.2014.00227

63. **M. Bikson**, S. Bestmann, D. Edwards. Transcranial Devices are not playthings. *Nature*. 2013 Sep 12; 501(7466):167. doi: 10.1038/501167b.

62. B. Guleyupoglu, P. Schestatsky, F. Fregni, **M. Bikson**. Methods and technologies for low-intensity transcranial electrical stimulation: waveforms, terminology, and historical notes. Chapter in Textbook of Neuromodulation. (Helena Knotkova and Dirk Rasche ed.) Springer. ISBN: 978-1-4939-1407-4, 2015, Page 7-16.

61. D. Truong. P. Minhas, A. Mokrejs, **M. Bikson**. A Role of Computational Modeling in Customization of Transcranial Direct Current Stimulation for Susceptible. Chapter in Textbook of Neuromodulation. (Helena Knotkova and Dirk Rasche ed.) Springer. ISBN: 978-1-4939-1407-4, 2015. Page 113-126.

60. D. Truong, P. Minhas, A. Nair, **M. Bikson**. Computational modeling assisted design of optimized and individualized transcranial Direct Current Stimulation protocols in *The Stimulated Brain* (Cohen Kadosh ed.) Elsevier Science – 2014. Chapter 4, Page 85-116.

59. I. Moreno-Duarte, N. Gebodh, P. Schestatsky, B. Guleyupoglu, D. Reato, **M. Bikson**, F. Fregni. Transcranial Electrical Stimulation: transcranial Direct Current Stimulation (tDCS), transcranial Alternating Current Stimulation (tACS), transcranial Pulsed Current Stimulation (tPCS), and Transcranial Random Noise Stimulaiton (tRNS) in *The Stimulated Brain* (Cohen Kadosh ed.) Elsevier Science – 2014, Chapter 2, Page 35-60.

58. T. Cano, J.L. Morales-Quezada, **M. Bikson**, F. Fregni. Methods to focalize noninvasive electrical brain stimulation: principles and future clinical development for the treatment of pain. *Expert Rev Neurother*. 2013 May;13(5):465-7. doi: 10.1586/ern.13.41.

57. **M. Bikson**, A. Rahman, A. Datta, F. Fregni, L. Merabet. High-resolution modeling assisted design of customized and individualized transcranial Direct Current Stimulation protocols. *Neuromodulation*. 2012 Jul;15(4):306-15. doi: 10.1111/j.1525-1403.2012.00481.x.

56. **M. Bikson**, A. Rahman, A. Datta. Computational Models of Transcranial Direct Current Stimulation. *Clin EEG Neurosci*. 2012 Jul;43(3):176-83. doi: 10.1177/1550059412445138.

55. **M. Bikson**, A. Datta. Guidelines for precise and accurate computational models of tDCS. *Brain Stimul*. 2012 Jul;5(3):430-1. doi: 10.1016/j.brs.2011.06.001.

54. **M. Bikson**, D. Reato, A. Rahman. Cellular effects of electric and magnetic fields: insights animal models and in slice. In *Transcranial Brain Stimulation (Frontiers in Neuroscience)*. 2012 ed. Carolo Miniussi, Walter Paulus, Paolo M. Rossini. CRC Press. ISBN 978-1439875704 p55-92

53. A.R. Brunoni, M.A. Nitsche, N. Bolognini, **M. Bikson** et al. Clinical research with transcranial direct current stimulation (tDCS): Challenges and Future Directions. *Brain Stimul*. 2012 Jul;5(3):175-95. doi: 10.1016/j.brs.2011.03.002.

52. A.V. Peterchev, T.N. Wagner, P.C. Miranda, M.A. Nitsche, W. Paulus, S.G. Lisanby, A. Pascual-Leone, **M. Bikson**. Fundamentals of transcranial electric and magnetic stimulation dose: definition, selection, and reporting practices. *Brain Stimul*. 2012 Oct;5(4):435-53. doi: 10.1016/j.brs.2011.10.001.

51. S.V. Karnup, **M. Bikson**, L.J. Tonello, T. Radman, T.T. Postolache. Brain derived endogenous electric fields feed-back on nerons. in Environment. Mood Disorders, and Suicide. ed. Teodor T. Postolache and Joav Merrick. Nova Science, New York 2011 ISBN 978-1-61668-505-8

50. **M. Bikson**, A. Datta, M. Elwassif, V. Bansal, A.V. Peterchev. Introduction to Electrotherapy Technology. In Brain Stimulation in the Treatment of Pain. Ed. Helena Knotkova, Ricardo Crucianim, and Joav Merrick. Nova Science, New York 2011 ISBN 978-1-60876-690-1

49. P. Minhas, A. Datta, **M. Bikson**. Cutaneous perception during tDCS: Role of electrode shape and sponge salinity. *Clin Neurophysiol*. 2011 Apr;122(4):637-8. doi: 10.1016/j.clinph.2010.09.023.

48. S. Sunderam, Gluckman, D. Reato, **M. Bikson**. Toward rational design of electrical stimulation strategies for epilepsy control. *Epilepsy Behav*. 2010 Jan;17(1):6-22. doi: 10.1016/j.yebeh.2009.10.017.

47. **M. Bikson**, A. Datta, M. Elwassif. Establishing safety limits for transcranial direct current stimulation. *Clin Neurophysiol*. 2009 Jun;120(6):1033-4. doi: 10.1016/j.clinph.2009.03.018.

46. **M. Bikson**, P. Bulow, J.W. Stiller, A. Datta, F. Battaglia, S.V. Karnup, T.T. Postolache. Transcranial direct current stimulation for major depression: a general system for quantifying transcranial electrotherapy dosage. *Curr Treat Options Neurol*. 2008 Sep;10(5):377-85.

45. D. Merrill, **M. Bikson**, J.G.R. Jefferys. Electrical stimulation of excitable tissue: design of efficacious and safe protocols. *J Neurosci Methods*. 2005 Feb 15;141(2):171-98.

•Cover

44. J.G.R. Jefferys, J. Deans, **M. Bikson**, J. Fox. Effects of weak electric fields on the activity of neurons and neuronal networks. *Radiat Prot Dosimetry*. 2003;106(4):321-3.

43. D.M. Durand, **M. Bikson**. Control of neuronal activity by electric fields: in-vitro models of epilepsy. In *Deep Brain Stimulation*. Hans Luders ed. Martin Dunitz Ltd. 2003 ISBN 978-1841842592

42. D.M. Durand, **M. Bikson**. Suppression and control of epileptiform activity by electrical stimulation: a review. *Proceedings of the IEEE* 2001; 89:1065-1082.

Selected Refereed Conference Proceedings

41. Limary Cancel, Dharia Silas, **Marom Bikson**, John Tarbell. Direct Current Stimulation Modulates Gene Expression in Endothelial Cells and Astrocytes (2020) BME

40. E. DaFonseca, A.F. DaSilva, **M. Bikson**, D. Troung, & M.F. DosSantos. (2019). Proceedings #21: Specific patterns of current flow generated by different tDCS montages in the midbrain and in the trigeminal brainstem sensory nuclear complex. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e84-e86. doi:10.1016/j.brs.2018.12.190

39. A. Datta, Y. Huang, C. Thomas, **M. Bikson**, & A.D. Shereen. (2019). Proceedings #12: Influence of incorporating electrode information from MR images: Towards building more realistic forward models. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e72-e74. doi:10.1016/j.brs.2018.12.181

38. Z. Esmaeilpour, M. Jackson, G. Kronberg, T. Zhang, R. Esteller, B. Hershey, & **M. Bikson**. (2019). Effect of kHz electrical stimulation on hippocampal brain slice excitability and network dynamics. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), 586. doi:10.1016/j.brs.2018.12.948

37. C. Fonteneau, M. Mondino, M. Arns, C. Baeken, **M. Bikson**, A.R. Brunoni, M.J. Burke, T. Neuvonen, F. Padberg, A. Pascual-Leone, E. Poulet, G. Ruffini, E. Santarneccchi, A. Sauvaget, K. Schellhorn, M-F., Suaud-Chagny, U. Palm, J. Brunelin. Sham tDCS: A hidden source of variability? reflections for further blinded, controlled trials. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, doi:10.1016/j.brs.2018.12.977

36. N. Gebodh, L. Vacchi, D. Adair, G. Unal, A. Poltorak, V. Poltorak, & **M. Bikson**. (2019). Proceedings #11: Replay of endogenous sleep rhythms to produce sleepiness. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e71-e72. doi:10.1016/j.brs.2018.12.180

35. Y. Huang, A. Datta, **M. Bikson**, & L. Parra. (2019). ROAST: A fully-automated, open-source, realistic vOlumetric-approach-based simulator for TES. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), 391. doi:10.1016/j.brs.2018.12.253

34. N. Khadka, A. Zannou, D. Truong, T. Zhang, R. Esteller, B. Hersey, & **M. Bikson**. (2019). Generation 2 kilohertz spinal cord stimulation (kHz-SCS) bioheat multi-physics model. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), 566. doi:10.1016/j.brs.2018.12.876

33. G. Kronberg, A. Rahman, **M. Bikson**, & L. Parra. (2019). A hebbian framework for predicting modulation of synaptic plasticity with tDCS. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), 554. doi:10.1016/j.brs.2018.12.831

32. A. Mourdoukoutas, G. Unal, J. Martin, M. Cortes, J. Fidock, & **M. Bikson**. (2019). Proceedings #14: Neuromodulation of spinal cord with tDCS extracephalic return electrode. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e75-e76. doi:10.1016/j.brs.2018.12.183

31. M. Shaw, N. Pawlak, C. Choi, N. Khan, A. Datta, & **M. Bikson**. (2019). Transcranial direct current stimulation (tDCS) induces acute changes in brain metabolism. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), 518. doi:10.1016/j.brs.2018.12.703

30. A. Boateng Jr., B. Paneri, A. Dufau, H. Borges, **M. Bikson**. The effect of cooling electrodes on tDCS tolerability. *Brain Stimul.* July–August 2017; 10(4): e82–e83. doi: <https://doi.org/10.1016/j.brs.2017.04.119>.

29. Z. Esmaeilpour, M. Milosevic, K. Azevedo, N. Khadka, J. Navarro, A. Brunoni, M.R. Popovic, **M. Bikson**, E.T. Fonoff. Intracranial Voltage Recording During Transcranial Direct Current Stimulation (tDCS) in Human Subjects with Validation of a Standard Model. *Brain Stimul.* July–August 2017; 10(4): e72–e75. doi: <https://doi.org/10.1016/j.brs.2017.04.114>.

28. M. Shaw, B. Dobbs, N. Pawlak, W. Pau, K. Sherman, **M. Bikson**, A. Datta, M. Kasschau, A. Frontario, L. Charvet. Updated Safety and Tolerability of Remotely-Supervised Transcranial Direct Current Stimulation (RS-tDCS). *Brain Stimul.* July–August 2017; 10(4): e60–e61. doi: <https://doi.org/10.1016/j.brs.2017.04.106>.

27. N. Pawlak, S. Agarwal, M. Biagioli, **M. Bikson**, A. Datta, L.E. Charvet. Remotely-supervised Transcranial Direct Current Stimulation (RS-tDCS) for Parkinson's Disease (PD) Clinical Trials: Guidelines and Feasibility. *Brain Stimul.* July–August 2017; 10(4): e59–e60. doi: <https://doi.org/10.1016/j.brs.2017.04.105>.

26. W. Pau, M. Shaw, B. Dobbs, M. Kasschau, A. Frontario, **M. Bikson**, A. Datta, L Charvet. Mood Improvement with Transcranial Direct Current Stimulation (tDCS) is Specific to Positive vs. Negative Affect in Multiple Sclerosis. *Brain Stimul.* July–August 2017; 10(4): e58–e59. doi: <https://doi.org/10.1016/j.brs.2017.04.104>.

25. B. Dobbs, M. Shaw, A. Frontario, K. Sherman, **M. Bikson**, A. Datta, M. Kasschau, L. Charvet. Remotely-Supervised Transcranial Direct Current Stimulation (RS-tDCS) Improves Fatigue in Multiple Sclerosis. *Brain Stimul.* July–August 2017; 10(4): e57–e58. doi: <https://doi.org/10.1016/j.brs.2017.04.103>.

24. C. Sarantos, J. Bekritsky, N. Khadka, **M. Bikson**, P. Adusumillu. *J Med Device.* 2015; 9, 030934-1;(Transactions of the ASME).

23. A. Cancelli, C. Cottone, M. Parazzini, S. Fiocchi, D.Q. Truong, **M. Bikson**, F.Tecchio. Transcranial Direct Current Stimulation: Personalizing the Neuromodulation. *Conf Proc IEEE Eng Med Biol Soc.* 2015: 234-7. doi: 10.1109/EMBC.2015.7318343.

22. N. Khadka, D.Q. Truong, **M. Bikson**. Principles of Within Electrode Current Steering (WECS). *J Med Device.* 2015 Apr 13-16;9 ,020947-1. doi:10.1115/1.4030126.

21. B.Lafon, A. Rahman, **M. Bikson**, L. Parra. Direct evidence of altered cell excitability by extracellular electric fields. *Brain Stimul.* 2017 Jan-Feb; 10(1):

20. G. Kronberg, **M.Bikson**,. Electrode assembly design for transcranial Direct Current Stimulation: A FEM modeling study. *Conf Proc IEEE Eng Med Biol Soc.* 2012

19. D.Q. Truong, G. Magerowski, A. Pascual-Leone, M. Alonso-Alonso, **M. Bikson**. Finite Element Study of Skin and Fat Delineation in an Obese Subject for Transcranial Direct Current Stimulation. *Conf Proc IEEE Eng Med Biol Soc.* 2012

18. D.Q. Truong, A. Datta, J. Xu, F. Fregni, **M. Bikson**. Optimization of Prefrontal Cortex transcranial Direct Current Stimulation via a Combined High Definition and Conventional Electrode Montage: A FEM modeling studying. *Conf Proc IEEE Eng Med Biol Soc.* 2012

17. P. Minhas, **M. Bikson**, A. Woods, A. Rosen, S. Kessler. Transcranial Direct Current Stimulation in Pediatric Brain: A computational modeling study. *Conf Proc IEEE Eng Med Biol Soc.* 2012

16. M. Arlotti, A. Rahman, P. Minhas, **M. Bikson**. Axon terminal polarization induced by weak uniform DC electric fields: a modeling study. *Conf Proc IEEE Eng Med Biol Soc.* 2012

15. J. Dmochowski, **M. Bikson**, A. Datta, J. Richardson, J. Fridriksson, L. Parra. On the Role of Electric Field Orientation in Optimal Design of Transcranial Electrical Stimulation. *Conf Proc IEEE Eng Med Biol Soc.* 2012

14. E. Caparelli-Daquer, T.J. Zimmermann, E. Mooshagian, L. Parra, J. Rice, A. Datta, **M. Bikson**, E.A. Wassermann. Pilot Study on Effects of 4x1 High-Definition tDCS on Motor Cortex Excitability. *Conf Proc IEEE Eng Med Biol Soc.* 2012

13. J. Dmochowski, **M. Bikson**, L. Parra. A Multiple Electrode Scheme for Optimal Non-Invasive Electrical Stimulation, 5th International IEEE EMBS Conference on Neural Engineering 2011

12. T. Radman, A. Datta, **M. Bikson**. One-dimensional representation of a neuron in a uniform electric field. *IEEE Engineering in Medicine and Biology Conference 2009*

11. A. Datta, **M. Bikson**. Bio-heat Transfer Model of Transcranial DC Stimulation: Comparison of Conventional Pad versus Ring Electrode. *IEEE Engineering in Medicine and Biology Conference 2009*

10. L. Oliveira, E. Servais, N. Rizk, P. Adusumilli, **M. Bikson** Intra-Operative Pulse Oximetry. Design of Medical Devices Conference 2009; *J. Med. Devices* 2009; 3, 027533.

9. A. Datta, V. Bansal, J. Diaz, J. Patel, L. Oliveira, D. Reato, **M. Bikson**. High-Density Transcranial DC Stimulation (HD-tDCS): Targeting Software *Design of Medical Devices Conference 2009*; *J. Med. Devices* 2009; 3, 027518.

8. M. Elwassif, A. Datta, **M. Bikson**. Temperature Control at DBS Electrodes Using Heat Sink: Experimentally Validated FEM Model of DBS Lead Architecture. *Design of Medical Devices Conference 2009*; *J. Med. Devices* 2009; 3, 027534.

7. J. Patel, V. Bansal, P. Minhas, J. Ho, A. Datta, **M. Bikson**. High Density Transcranial Direct Current Stimulation (HD-tDCS): Skin Safety and Comfort. *Design of Medical Devices Conference 2009*; *J. Med. Devices* 2009; 3, 027533.

6. J. Diaz, V. Bansal, A. Datta, J. Patel, **M. Bikson**. High-Density Transcranial Direct Current Stimulation (HD-tDCS) Hardware Interface. *Design of Medical Devices Conference 2009*; *J. Med. Devices* 2009; 3, 027544.

5. M. Elwassif, Q. Kong, M. Vazquez, **M. Bikson**. Bio-Heat Transfer Model of Deep Brain Stimulation Induced Temperature changes. *IEEE Engineering in Medicine and Biology Conference 2006*.

4. T. Radman, L. Parra, **M. Bikson**. Amplification of small electric fields by neurons; implications for spike timing. *IEEE Engineering in Medicine and Biology Conference 2006*, SaBP5.1

3. D. Durand, J. Alcia, **M. Bikson**. Suppression of Neural Activity with High Frequency Stimulation In-Vitro *IEEE Engineering in Medicine and Biology Conference 2006*, ThC13.5

2. L.C. Parra, **M. Bikson**. Model of effect of extracellular fields on spike time coherence. *IEEE Engineering in Medicine and Biology Conference 2004*

1. **M. Bikson**, R. Id Bihi, M. Vreugdenhil, R. Kohling, J.E. Fox, J.G.R. Jefferys. Effect of Quinine of spontaneous low-Ca²⁺ epileptiform activity and intrinsic cell properties. *Journal of Physiology*. 2001, 536P.

Selected Abstracts (limited selection, not regularly updated since 2019)

1. P3.002 AT-HOME TELEHEALTH TRANSCRANIAL DIRECT CURRENT STIMULATION FOR TREATMENT RESISTANT DEPRESSION. Amy Vogel-Eyny, Hyein Cho, Giuseppina Pilloni, Allan George, Matthew Lustberg, Abhishek Datta, Marom Bikson, Kamran Nazim, R. Erik Charlson, Leigh Charvet. International Brain Stimulation Conference, 2023
2. P1.177 REMOTELY SUPERVISED TDCS FOR PERSISTENT POST-TRAUMATIC HEADACHE IN VETERANS (RESTORE). Michelle Androulakis, Kiersten Mangold, Adam Harrison, Robert Davis Moore, Siyuan Guo, Jiajia Zhang, Abhishek Datta, Marom Bikson, Leigh Charvet. International Brain Stimulation Conference, 2023

3. P1.055 Transcranial Electrical Stimulation in Stroke EaRly After onset Clinical Trial (TESSERACT). Mersedeh Bahr-Hosseini, Kambiz Nael, Marco Iacoboni, David Liebeskind, Marom Bikson, Jeffrey Saver. DOI:<https://doi.org/10.1016/j.brs.2023.01.358>. International Brain Stimulation Conference, 2023
4. INTERNATIONAL STROKE CONFERENCE 2023 POSTER ABSTRACTS. SESSION TITLE: CEREBROVASCULAR SYSTEMS OF CARE POSTERS I. Abstract WP36: Transcranial Electrical Stimulation (tDCS) In Stroke Early After Onset Clinical Trial (tesseract) Mersedeh Bahr-Hosseini, Kambiz Nael, Marco Iacoboni, David S Liebeskind, Marom Bikson and Jeffrey L Saver. Originally published 2 Feb 2023 https://doi.org/10.1161/str.54.suppl_1.WP36Stroke.2023;54:AWP36
5. Bioheat model of spinal column heating during high-density Spinal Cord Stimulation. Adantchede L Zannou, Niranjan Khadka, Marom Bikson. 2022 Joint meeting of Neuroergonomics Conference & NYC Neuromodulation Conference
6. Mechanical stimulation by an automatic massage bed : predicting stresses and deformation in human body parts using computational modeling Luis Cardoso 1, Niranjan Khadka 2, Jacek Dmochowski 1, Edson Meneses 1, Kiwon Lee 3, Sungjin Kim 3, Youngsoo Jin 3,4, Marom Bikson 1. 2022 Joint meeting of Neuroergonomics Conference & NYC Neuromodulation Conference
7. Thermal stimulation by an automatic massage bed: predicting temperature and blood flow in human body parts using computational modeling. Jacek P Dmochowski, Niranjan Khadka, Luis Cardoso, Edson Meneses, Kiwon Lee, Sungjin Kim, Youngsoo Jin and Marom Bikson. 2022 Joint meeting of Neuroergonomics Conference & NYC Neuromodulation Conference
8. Transcranial Direct Current Stimulation (tDCS) in children with ADHD: A Randomized, Sham-Controlled Pilot Study. Mitchell Schertz, Yael Karni-Visel, Jacob Genizi, Hofit Manishevitch, Menachem Lam, Ashraf Akawi, Michal Dudai, Andre Fenton, Marom Bikson. 2022 Joint meeting of Neuroergonomics Conference & NYC Neuromodulation Conference
9. Real-Time and Cumulative Changes in Brain Blood Flow and Oxygen Metabolism in Multiple Sclerosis: A Simultaneous tDCS-MRI Study. Marco Muccio, Lillian Walton Masters, Giuseppina Pilloni, Peidong He, Lauren Krupp, Abhishek Datta, Marom Bikson, Leigh Charvet, Yulin Ge. 2022 Joint meeting of Neuroergonomics Conference & NYC Neuromodulation Conference
10. ID 16365 High Density Spinal Cord Stimulation (HD-SCS) Increases Spinal Tissue Temperature. Neuromodulation. VOLUME 25, ISSUE 5, SUPPLEMENT , S79, JULY 01, 2022
11. ID 16279 Neurocapillary-Modulation, Neuromodulation. VOLUME 25, ISSUE 5, SUPPLEMENT , S67, JULY 01, 2022
12. 3th International ADHD Congress 2022 (Israel). "Transcranial Direct Current Stimulation (tDCS) in children with ADHD: A Randomized, Sham-Controlled Pilot Study"
13. Neuronal Response to Transcranial Direct Current Stimulation (tDCS) in Multiple Sclerosis. 2022 ISMRM Meeting

14. Design of a Wearable White Cane for Blind Toddlers".Fourteenth International Conference on Design Principles & Practices, at Pratt Institute, Brooklyn Campus. 2019
15. M. Bikson. (2019). Downloading personalized brain stimulation. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), 424. doi:10.1016/j.brs.2018.12.375 - Talk
16. D. Adair., D.Q. Truong, L. Ho, B.W. Badran, H. Borges, & **M. Bikson**. (2019). Abstract #124: How to modulate cognition with cranial nerve stimulation? *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e42-e43. doi:10.1016/j.brs.2018.12.131
17. P.Y. Chhatbar, S.A. Kautz, I. Takacs, N.C. Rowland, G.J. Revuelta, M.S. George, **M. Bikson**, W. Feng. (2019). Abstract #22: First report of recording transcranial direct current stimulation-generated electric fields in subthalamic nuclei using directional leads. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e8. doi:10.1016/j.brs.2018.12.029
18. Z. Esmaeilpour, A.D. Shereen, **M. Bikson**, & H. Ekhtiari. (2019). Abstract #147: MRI neuroimaging methods for tDCS: A methodological note on study design and parameter space. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e50. doi:10.1016/j.brs.2018.12.154
19. M. Fallahrad, L. Zannou, N. Khadka, S.A. Prescott, S. Ratté, T. Zhang, R. Esteller, B. Hershey, **M. Bikson**. (2019). Abstract #159: Hardware suitable for electrophysiology and stimulation in kHz range. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e54. doi:10.1016/j.brs.2018.12.166
20. D.B. Favoretto, E. Bergonzoni, D. Nascimento, B. Rimoli, T. Will-Lemos, D.Q. Truong, R. Moraes, F. Louzada, J Leite, **M. Bikson**, D.J. Edwards, T.E. Santos. (2019). Abstract #119: Polarity-dependent effects on postural control after high-definition transcranial direct current stimulation over the temporo-parietal junction. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e41. doi:10.1016/j.brs.2018.12.126
21. N. Gebodh, Z. Esmaeilpour, D. Adair, K. Chelette, J. Dmochowski, L. Parra, A. J. Woods, E.S. Kappenman, **M. Bikson**. (2019). Abstract #125: Failure of conventional signal processing techniques to remove "Physiological" artifacts from EEG during tDCS. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e43. doi:10.1016/j.brs.2018.12.132
22. J. Jiang, D.Q. Truong, & **M. Bikson**. (2019). Abstract #115: What is theoretically more focal: HD-tDCS or TMS? *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e39-e40. doi:10.1016/j.brs.2018.12.122
23. J. Jiang, D.Q. Truong, Y. Huang, L. Parra, & **M. Bikson**. (2019). Abstract #118: Transcranial electrical stimulation models using an emulated-CSF value approximate the meninges more accurately. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e40-e41. doi:10.1016/j.brs.2018.12.125
24. N. Khadka, H. Borges, T. Kauffman, A. Pascal, B. Paneri, E. Nassis, Y. Shin, H. Choi, S. Kim, K. Lee, **M. Bikson**. (2019). Abstract #109: Tolerability of an adaptive-tDCS upto 4 mA using subject assessment and machine-learning to optimize dose. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e37-e38.

doi:10.1016/j.brs.2018.12.116

25. N. Khadka, H. Borges, A.L. Zannou, J. Jang, B. Kim, K. Lee, & **M. Bikson**. (2019). Abstract #100: Dry tDCS: Tolerability of a novel multilayer hydrogel composite non-adhesive electrode for tDCS. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e35. doi:10.1016/j.brs.2018.12.107
26. G. Kronberg, A. Rahman, **M. Bikson**, & L. Parra. (2019). Abstract #122: A hebbian framework for predicting modulation of synaptic plasticity with tDCS. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e42. doi:10.1016/j.brs.2018.12.129
27. O. Meiron, R. Gale, J. Namestnic, O. Bennet-Back, J. David, N. Gebodh, D. Adair, Z. Esmaeilpour, **M. Bikson**. (2019). Abstract #123: Attenuation of pathological EEG features in nonnatal electroclinical syndromes: HD-tDCS in catastrophic epilepsies. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e42. doi:10.1016/j.brs.2018.12.130
28. D. Quinn, J. Upston, T. Jones, J. Richardson, L. Worth, V. Fratzke, J. Stephen, M. Hoffer, T. Alvarez, C. Yaramothu, S. Harris-Carriaman, **M. Bikson**, A. Mayer. (2019). Abstract #1: Individualizing HD-tDCS with fMRI and E-field modeling: Pilot data from the NAVIGATE-TBI study. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e1. doi:10.1016/j.brs.2018.12.008
29. C. Salvi, R.D. Conrardy, **M. Bikson**, M. Beeman, & J. Grafman. (2019). Abstract #142: Effects of high definition tDCS on problem solving networks. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 12(2), e49. doi:10.1016/j.brs.2018.12.149
30. L. Vacchi, N. Gebodh, D. Adair, G. Unal, A. Poltorak, V. Poltorak, **M. Bikson**. Transcranial Endogenous Sleep-Derived waveform to induce sleepiness. Annual Meeting of Milan Center for Neuroscience, Milan, Italy. 21 November 2018
31. A. DePaolis, P. Williams, D. Truong, J.R. Brandenburg, A.C. Seifert, A. Sarkar, J. Xu, **M. Bikson**, J.H. Martin, S. Weinbaum, L. Cardoso. Mechanical characterization of Spinal Cord Injury (SCI): tissue level thresholds in a rat model. 2018 World Congress of Biomechanics, Dublin, Ireland. 8-12 July 2018.
32. ROAST: an open-source, fully-automated, Realistic vOlumetric-Approach-based Simulator for TES, (167) 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'18)
33. P.Y. Chhatbar, S.A. Kautz, I. Takacs, N.C. Rowland, G.J. Revuelta, M.S. George, **M. Bikson**, W. Feng. Transcranial Direct Current Stimulation (tDCS) Generates Electric Fields (EF) at the Level of Deep Nuclei of the Human Brain *in vivo*. *Stroke*. 2018 January 22; 49:AWP139
34. M. Bahr Hosseini, J Hou, **M. Bikson**, M. Iacoboni, J.L. Saver. Transcranial Direct Current Stimulation (tDCS) for Neuroprotection in Acute Cerebral Ischemia: Meta-analysis of Preclinical Studies and Implications for Human Clinical Trials. *Stroke*. 2018 January 22; 49:ATP72
35. L. Zannou, N. Khadka, M. Jackson, M. FallahRad, B. Hershey, R. Esteller, T. Zhang, **M. Bikson**. Temperature increases during conventional and high frequency Spinal Cord

Stimulation (SCS). *Brain Stimul.* 2017 July–August;10(4): e44. doi: <http://dx.doi.org/10.1016/j.brs.2017.04.086>.

36. G. Unal, A. H. Okano, **M. Bikson**. Seeking a Superman's brain: HD-tDCS of brain networks in exercise performance. *Brain Stimul.* 2017 July–August;10(4): e43. doi: <http://dx.doi.org/10.1016/j.brs.2017.04.083>.
37. D. Adair, D.Q. Truong, L. Ho, H. Borges, **M. Bikson**. Bottom-Up Modulation of Cognition through Electrical Stimulation of Cranial Nerves. *Brain Stimul.* 2017 July–August;10(4): e42. doi: <http://dx.doi.org/10.1016/j.brs.2017.04.078>.
38. J. P. Dmochowski, L. Koessler, A. M. Norcia, **M. Bikson**, L. C. Parra. Optimal use of EEG recordings to target active brain areas with transcranial electrical stimulation. *NeuroImage* 2017 May31. doi: <http://dx.doi.org/10.1016/j.neuroimage.2017.05.059>.
39. Donel Martin, Shawn McClintock, Angelo Alonzo, Scott Aaronson, **Marom Bikson**, Mustafa Husain, Sarah Lisanby, William McDonald, John O'Reardon, Colleen Loo. Neurocognitive Predictors of Antidepressant Efficacy to Transcranial Direct Current Stimulation: Results from an International Randomized Controlled Trial. *Biological Psychiatry*. 2017 May 15; 81 (10), Supplement, Page S260.
40. Da Wi Shin, Niranjan Khadka, Jie Fan, **Marom Bikson**, Bingmei Fu. Transcranial Direct Current Stimulation Transiently Increases the Blood-Brain Barrier Solute Permeability in vivo. BMES 2016 Annual Meeting
41. A. De Paolis, **M. Bikson**, J.T. Nelson, M. Packer, L. Cardoso. Effect of the perilymph hydrodynamic behavior on the traveling wave motion of the basilar membrane in the cochlea. BMES 2016 Annual Meeting
42. Da Wi Shin ; Niranjan Khadka ; Jie Fan ; **Marom Bikson** and Bingmei M. Fu. "Transcranial direct current stimulation transiently increases the blood-brain barrier solute permeability in vivo ", Proc. SPIE 9788, *Medical Imaging 2016: Biomedical Applications in Molecular, Structural, and Functional Imaging*, 97881X (March 29, 2016); doi:10.1117/12.2218197;
43. Prasad S. Adusumilli, **Marom Bikson**, Nabil Rizk, Valerie W. Rusch, Boris Hristov, Rachel Grosser, Kay See Tan, Inderpal Sarkaria, James Huang, Daniela Molena, David R. Jones, Manjit S. Bains. A Prospective Clinical Trial of Intra-operative Tissue Oxygenation Measurement and its Association with Anastomotic Leak Rate After Ivor Lewis Esophagectomy 96th Annual Meeting of the American Association for Thoracic Surgery 2016
44. American Academy of Neurology meeting, Vancouver, April 16: Remotely-Supervised Home Delivery of tDCS is Feasible and Well-Tolerated in Adults with Multiple Sclerosis (MS) Margaret Kasschau, Jesse Reisner, Kathleen Sherman, Ariana Frontario, **Marom Bikson**, Abishek Datta, Leigh Charvet
45. S. Baybar, **M. Bikson**, D. Edwards. T. Santos-Pontelli. tDCS to PIVC and transmastoidal WCNR 2015
46. Hogeveen,J.,Grafman,J., Aboseria, M., David,A.,**Bikson,M.**,&Hauner,K.K.(forthcoming).Context-dependent improvement of inhibitory control through transcranial direct current stimulation. The Psychonomic Society,

Chicago, IL, USA. – Poster.

47. Hogeveen,J.,Grafman,J.,Aboseria, M., David,A.,**Bikson,M.**,&Hauner,K.K.(forthcoming).High-definition transcranial direct current stimulation to right inferior frontal cortex improves response inhibition. Society for Neuroscience, Chicago, IL, USA. – Talk
48. Adantchede L. Zannou; Marom Bikson, Ph.D.; Fatima Zunara; and Niranjan KhadkaMonitoring the Temperature of the Skin During Transcranial Direct Current Stimulation. ABRCMS 2015
49. Santos-Pontelli T, **Bikson M** et al. Polarity-dependent misperception of visual vertical during and after transcranial Direct Current Stimulation (tDCS)" VII International Symposium on Neuromodulation Sao Paulo-Brazil, 2015
50. H. Knotkova, A. Riggs, V. Patel, J. Harounian, P. Heshmati, D. Arce, A. Datta, **M. Bikson**. Advances in transcranial Direct Current Stimulation (tDCS): Adjustment of technology, protocol and training for home-based, self-delivered remotely supervised tDCS for community-dwelling patients with advanced chronic illness. NANS 2015
51. Berkan Guleyupoglu, Alexander David, **Marom Bikson**. Electrosleep revisited: A new look into an old technique. NYC Neuromodulation 2013 Abstract, Published in Brain Stimulation Vol. 7, Issue 2, Page e10
52. Belen Lafon, Asif Rahman, **Marom Bikson**, Lucas C. Parra. Direct current stimulation modulates the synaptic input required for firing. NYC Neuromodulation 2013 Abstract, Published in Brain Stimulation Vol. 7, Issue 2, Page e11
53. Jessica Berard, Isis E. Martínez-Hernández, Abhishek Datta, **Marom Bikson**, et al. Effects of montage configuration on cortical excitability NYC Neuromodulation 2013 Abstract, Published in Brain Stimulation Vol. 7, Issue 2, Page e15
54. Ole Seibt, Albert Mokrejs, **Marom Bikson**. HD-Electrode assembly design for decreased transcranial Direct Current Stimulation (tDCS) current density on the skin: A FEM modeling study. NYC Neuromodulation 2013 Abstract, Published in Brain Stimulation Vol. 7, Issue 2, Page e10
55. Dennis Q. Truong, Berkan Guleyupoglu, Abhishek Datta, Preet Minhas, **Marom Bikson** et al. Inter-Individual Variation during Transcranial Direct Current Simulation and Normalization of Dose Using MRI-Derived Computational Models NYC Neuromodulation 2013 Abstract, Published in Brain Stimulation Vol. 7, Issue 2, Page e10
56. Mahtab Alam, **Marom Bikson**, Dennis Truong. Spatial and polarity precision of High-Definition transcranial Direct Current Stimulation (HD-tDCS) NYC Neuromodulation 2013 Abstract, Published in Brain Stimulation Vol. 7, Issue 2, Page e11
57. Dennis Truong, Preet Minhas, Albert Mokrejs, **Marom Bikson**. Customization of transcranial Direct Current Stimulation for susceptible populations including at the extremes of age, obesity, and stroke NYC Neuromodulation 2013 Abstract, Published in Brain Stimulation Vol. 7, Issue 2, Page e5-e6
58. Jessica D. Richardson, Paul Fillmore, Abhishek Datta, Dennis Truong, **Marom Bikson** et al. Sham protocols for transcranial direct current stimulation using high-definition

electrodes NYC Neuromodulation 2013 Abstract, Published in Brain Stimulation Vol. 7, Issue 2, Page e8

59. M. Scheldrup, P.M. Greenwood, J. Vance, S. Glazier, B. Falcone, R.A. McKinley, **M. Bikson**, R. Parasuraman. tDCS across multiple days of training on a complex cognitive task. Effects of stimulation schedule on learning and retention. Cognitive Neuroscience Society 2014
60. M. Alam, D.Q. Truong, **M. Bikson**. Spatial and polarity precision of high-definition transcranial direct current stimulation (HD-tDCS). Society for Neuroscience Meeting (2013) 587
61. M. Alonso-Alonso, **M. Bikson** et al. Translating tDCS into the field of obesity: using computational models to guide parameters and protocols in clinical trials. 31st Annual Scientific Meeting of Obesity Society 2013
62. D.Q. Truong, M. Alam, A. Datta, **M. Bikson**. FEM study of the spatial and polarity precision of 4x1 High-Definition transcranial Direct Current Stimulation (HD-tDCS). Magstim Neuroenhancement Conference & Workshop, Oxford, UK 2013
63. D.Q. Truong, B. Guleyupoglu, A. Datta, P. Minhas, G. Magerowski, M. Alonso-Alonso, L.C. Parra, **M. Bikson**. Inter-individual variation during transcranial Direct Current Stimulation and Normalization of Dose using MRI-derived computational models. Magstim Neuroenhancement Conference & Workshop, Oxford, UK 2013
64. B. Guleyupoglu, P. Schestatsky, F. Fregni, **M. Bikson**. A historical development of transcranial electrical stimulation: Dose Development from 1900 to contemporary approaches. 5th International Conference on Non-invasive Brain Stimulation, Leipzig German 2013
65. D. Reato, **M. Bikson**, L.C. Parra. Long-term effects of weak electrical stimulation on active neuronal networks (#230) to the Twenty-Second Annual Computational Neuroscience Meeting CNS 2013
66. V. V. Lazarev; T. Tamborino; **M. Bikson**; M. Letícia F. Ferreira; L. deAzevedo Egas, M. Caparelli-Dáquer. Focal EEG effects of High Definition tDCS (HD-tDCS) detected by EEG photic driving. 5th International Conference on Non-Invasive Brain Stimulation 2013
67. M.F. Villamar, P. Wivatvongvana, J. Patumanond, A. Datta, **M. Bikson**, A. Santos Portilla, F. Fregni. Primary Motor Cortex Modulation in Fibromyalgia Patients Using 4x1-Ring High-Definition Transcranial Direct Current Stimulation: Immediate and Delayed Analgesic Effects of Cathodal and Anodal Stimulation. Massachusetts General Hospital Clinical Research Day 2012. Boston, MA. 10/2012.
68. M.F. Villamar, P. Wivatvongvana, J. Patumanond, A. Datta, **M. Bikson**, A. Santos Portilla, F. Fregni. Analgesic Effects of 4x1-Ring High-Definition Transcranial Direct Current Stimulation in Fibromyalgia Patients. 4th International Symposium on Neuromodulation. Sao Paulo, Brazil. 09/2012. Citation: Anais do IV Simpósio Internacional em Neuromodulação, 2012, v1, p1-37. ISBN: 978-85-65408-01-1
69. A. Woods, A. Chatterjee, A. Kranjec, **M. Bikson**, P. Minhas, R. Hamilson. Space, Time, and Causal Inference: a tDCS Study. Society for Neuroscience Abstracts. 2012
70. D. Reato, **M. Bikson** et al. Transcranial electrical stimulation accelerates sleep homeostasis in humans. The Bernstein Conference on Computational Neuroscience 2012

71. B. Lafon, **M. Bikson** et al. Electric field modulation of long-term plastic effects. The Bernstein Conference on Computational Neuroscience. 2012
72. S.K. Kessler, **M. Bikson** et al. Dosage considerations for transcranial direct current stimulation in children: a computational modeling study. 41st Annual Meeting of the Child Neurology Society. 2012
73. R. Hamilton, J. Medina, J. Beauvais, A. Datta, **M. Bikson**, H. Coslett. Transcranial Direct Current Stimulation Enhances Contralateral Visual Target Detection. 64th American Academy of Neurology Annual Meeting, 2012
74. J. Dmochowski, **M. Bikson**, L. Parra. Targeting Deep Brain Regions with Optimized Multielectrode Transcranial Direct Current Stimulation. Biomedical Engineering Society 2011
75. A. Rahman, C. Hahn, L. Oliveira, **M. Bikson**. A Current-Limited Low-Voltage Design For Transcranial Direct Current Stimulation. Biomedical Engineering Society 2011
76. D. Reato, **M. Bikson**, L. Parra. Plastic Effects of Electrical Stimulation on Slow Waves Activity: A Computational Study. Biomedical Engineering Society 2011
77. A. Rahman, D. Reato, L. Parra, **M. Bikson**. Synaptic Pathway-Dependent Effects of DC Electric-Fields in Rat Cortical Brain Slices. Biomedical Engineering Society 2011
78. A.F. Desilva, A. Datta, M.E. Mendonca, S.Zaghi, M. Lopes, M.F. Dossantos, E.L. Spierings, Z. Bajwa, **M. Bikson**, F. Fregni. Chronic migraine alleviation by tDCS is predicted to be associated with current flow through pain-related (sub)corticalregions. international headache society (berlin), 2011
79. C. Colovos, N. P. Rizk , N. Singh, M.S. Bains, **M. Bikson**, V.W. Rusch, P.S. Adusumilli. Real-time Intraoperative Tissue Oxygenation Monitoring by Wireless Pulse Oximetry (WiPOX) to Assess Gastric Conduit Oxygenation During Esophagogastrectomy: A Prospective Feasibility Study, American College of Surgeons, 2011
80. A.F. DeSilva, A. Datta, M.E. Mendonca, S.Zaghi, M. Lopes, M.F. DosSantos, E.L. Spierings, Z. Bajwa, **M. Bikson**, F. Fregni, Migraine Alleviation by tDCS is Predicted to be Associated with Current Flow Through Pain-Related (Sub)Cortical Regions. American Headache Society, 2011
81. D. Reato, **M. Bikson**, L.C. Parra, Intrinsic network dynamics govern sensitivity to weak electric fields: Adaptation, modulation and sub-harmonic pacing. Soc. Neurosci. Abs. 2010
82. A. Rahman, D. Reato, T. Radman, M. Gleichmann, A. Datta, L.C. Parra, **M. Bikson**, Effects of Weak Direct Current Stimulation on Synaptic Plasticity in Rat Motor Cortex in vitro. Soc. Neurosci. Abs. 2010
83. P. Turkeltaub, J. Benson, R. Hamilton, A. Datta, **M. Bikson**, H.B. Coslett. Lateralizing stimulation of the posterior temporal lobes improves reading efficiency. 2011 Cognitive Neuroscience Society Meeting.
84. V. Bansal, A. Datta, D. Reato, J. Patel, L. Parra, E. Wassermann, E. Caparelli-Daquer, **M. Bikson**. High-Density Transcranial Direct Current Stimulation (HD-tDCS) system. II International Symposium in Neuromodulation 2010

85. A. Rahman, T. Radman, A. Datta, D. Reato, **M. Bikson**. Effects of short and long-duration DC electric fields on synaptic efficacy in rat motor cortex slices. II International Symposium in Neuromodulation 2010

86. V. Bansal, A. Datta, D. Reato, J. Patel, L. Parra, E. Wassermann, E. Caparelli-Daquer, **M. Bikson**. High-Density Transcranial Electrical Stimulation (HD-tES). CIMIT Conference 2009

87. T. Radman, R. L. Ramos, J. C. Brumberg, **M. Bikson**. A low cost electrophysiology lab for high school and undergraduate students. Soc. Neurosci. Abs. 2009; 20.2/GG31

88. V. P. Clark, B. A. Coffman, C. Garcua, M. P. Weisend, A. Van Der Merwes, E.S. Brownings, T. Lane, K. Kelly, A. Mayers, E. M. Raybourn, V. D. Calhoun, **M. Bikson**, E. M. Wassermann, J. P. Phillips. Transcranial direct current stimulation (TDCS) targeted with brain imaging greatly accelerates visual learning. Soc. Neurosci. Abs. 2009; 306.14

89. B. Coffman, V. P. Clark, C. Garcua, M. P. Weisend, A. Van Der Merwes, A. Mayers, E.S. Brownings, D. Puffer, V.D. Calhoun, E.M. Wassermann, J. P. Phillips, T. Lane, K. Kelly, **M. Bikson**, E. M. Raybourn. Changes in brain networks with learning of covert threat cues. Soc. Neurosci. Abs. 2009; 380.18/FF116

90. T. Radman, A. Rahman, A. Datta, D. Reato, **M. Bikson**. Low-amplitude DC electric fields induce long-term potentiation in rat motor cortex in vitro. Soc. Neurosci. Abs. 2009; 719.8/D4

91. D. Reato, **M. Bikson**, LC. Parra. Low Amplitude Electrical Stimulation Modulates Induced Gamma Activity in Vitro. *3rd Tinnitus Research Initiative Meeting (Stresa, Italy)* 2009

92. D. Reato, LC. Parra, **M. Bikson**. Low-amplitude electric fields modulate the dynamics of a neuronal network oscillating at gamma frequencies. *4th International Workshop on Seizure Workshop (Kansas City)* 2009

93. A. Datta, M. Elwassif, F. Battaglia, **M. Bikson**. Transcranial current stimulation focality using disk and ring electrode configurations: FEM analysis. *Neural Interfaces Conference (Cleveland)* 2008

94. V. Lopez, A. Datta, R. Amaya, M. Elwassif, J. Tarbell, **M. Bikson**. Induced BBB electroporation during DBS: In vitro endothelial monolayer model. *Neural Interfaces Conference (Cleveland)* 2008

95. M. Elwassif, A. Datta, **M. Bikson**. Induced Temperature changes during DBS: Experimental validation of DBS leads 3387/3389 Heat Transfer Model. *Neural Interfaces Conference (Cleveland)* 2008

96. A. Datta, M. Elwassif, V. Bansal, J. Diaz, F. Battaglia, **M. Bikson**. A system and device for focal transcranial direct current stimulation using concentric ring electrode configurations. *3rd International Conference on TMS/tDCS conference (Goettingen)* 2008

97. R. Said, R. Cotton, P. Young, A. Datta, M. Elwassif, **M. Bikson**. Image based-mesh generation for realistic simulation of the transcranial current stimulation. Proc. of COMSOL Conference 2008

98. Datta, M. Elwassif, V. Bansal, J. Diaz, F. Battaglia, **M. Bikson**. A system and device for focal transcranial direct current stimulation using concentric ring electrode configurations. COMSOL Conference 2008

- Popular Choice Poster Award

99. D. Reato, **M. Bikson**, L.C. Parra. Modulation of carbachol-evoked gamma activity in vitro with low-amplitude AC electric fields *Soc. Neurosci. Abst.* 2008

100. T. Radman, R.L. Ramos, J.C. Brumberg, **M. Bikson**. Role of cortical cell type and neuronal morphology in electric field stimulation" 3rd International Conference on Transcranial Magnetic and Direct Current Stimulation 2008

101. T. Radman, R.L. Ramos, J.C. Brumberg, **M. Bikson**. Targets of cortical electrical stimulation: Layer 5 pyramidal neurons, Neural Interfaces Conference 2008

102. **M. Bikson**, Y Su, T Radman, J An, L Parra Spike timing amplifies the effect of electric fields on neurons: implications for endogenous field-effects *Soc. Neurosci. Abst.* 2007

103. T. Radman, R. Ramos, **M. Bikson**, J. Brumberg. Target for cortical electrical stimulation: the NMDA receptor. *Soc. Neurosci. Abst.* 2007

104. A. Datta, Battaglia F **M. Bikson** Simulation of TES focality using common and novel electrode configuration BMES 2007

105. J.H. An, **M. Bikson** et al. Effects of long-term exposure to weak electric fields on synaptic plasticity in rat brain slices. BMES 2007

106. J.H. An, T. Radman, **M. Bikson**. Effects of glucose and glutamine concentration in the formulation of the artificial cerebrospinal fluid (ACSF) *Soc. Neurosci. Abst.* 2006

107. T. Radman, L. Parra, **M. Bikson**. Amplification of small electric fields by neurons; implications for endogenous field-effects *Soc. Neurosci. Abst.* 2006

108. T. Radman, L. Parra, **M. Bikson**. Amplification of small electric fields by neurons; environmental implications. *Vienna University of Technology Junior Scientist Conference*
• Award of Special Recognition

109. **M. Bikson**, Q. Kong, M. Vazquez. Joule heating and electroporation during Deep Brain Stimulation. *NINDS Neural Interface Workshop* 2005

110. Q. Kong, M. Vazquez, **M. Bikson**. Model of Deep Brain Stimulation-induced temperature changes. *Biomedical Engineering Soc.* 2004

111. Q. Kong, **M. Bikson**, M. Vazquez. Bio-heat model of Deep Brain Stimulation-induced temperature changes. *Soc. Neuroscience Abst.* 2004

112. L. Parra, **M. Bikson**, C.C. McIntyre. Model of effect of extracellular fields on spike time coherence. *Soc. Neuroscience Abst.* 2004

113. **M. Bikson**, C.C. McIntyre, C.L. Wilson, J.E. Fox, M.G. Lacey, J.G.R. Jefferys. A role for extracellular potassium concentration changes in the modulation of neuronal firing during high frequency stimulation of subthalamic nucleus *in vitro*. *Soc. Neuroscience Abstr.* 734.3, 2003

114. J.E. Fox, **M. Bikson**, J.G.R. Jefferys. Tissue resistance changes and the profile of synchronised neuronal discharges during low calcium field bursts. *Soc. Neuroscience Abstr.* 411.10, 2003

115. J.K. Deans, **M. Bikson**, J.E. Fox, J.G.R. Jefferys. Effects of AC fields at powerline frequencies on gamma oscillations *in vitro*. *Soc. Neuroscience Abstr.* 258.1, 2003

116. A. Ruiz-Nuno, **M. Bikson**, J.E. Fox, J.G.R. Jefferys. Role of synaptic mechanisms and depolarization block in the high-K⁺ model of epileptiform activity. 6th IBRO World Congress of Neuroscience. 2348, 2003

117. **M. Bikson**, J.E. Fox, J.G.R. Jefferys. Role of field effects in controlling the profile of synchronised neuronal discharges in the low calcium model of epilepsy. 6th IBRO World Congress of Neuroscience. 1333, 2003

118. D.M. Durand, J. Lian, **M. Bikson**. Suppression of epileptiform activity by high frequency stimulation in-vitro. *American Epilepsy Soc.* 1.074, 2002

119. J.E. Fox, **M. Bikson**, J.G.R. Jefferys. The role of depolarisation block in the low calcium model of epilepsy. *American Epilepsy Soc.* 1.076, 2002

120. **M. Bikson**, C. McIntyre, M. Inoue, H. Akiyama, J.E. Fox, W.M. Grill, H. Miyakawa, J.G.R. Jefferys Effect of uniform DC electric fields on CA1 hippocampal pyramidal neurons. *Soc. Neuroscience Abstr.* 446.1, 2002

121. A. Ruiz Nuno, **M. Bikson**, J.E. Fox, M. Vreugdenhil, J.G.R. Jefferys. Local glutamate application induces high-frequency (>80 Hz) oscillations in the absence of synaptic transmission. *Soc. Neuroscience Abstr.* 187.4, 2002

122. **M. Bikson**, C.C. McIntyre, W.M. Grill, J.E. Fox, J.G.R. Jefferys. Effects of uniform DC electric fields on hippocampal function in-vitro. *Federation of European Neuroscience Societies* 187.3, 2002

123. J.E. Fox, **M. Bikson**, P.J. Hahn, J.G.R. Jefferys. Neuronal firing is not necessary for maintenance of ictal epileptiform events. *Federation of European Neuroscience Societies* 187.13, 2002

124. J. Lian, **M. Bikson**, J. Shuai, D.M. Durand. Propagation of epileptiform activity across a lesion. *Soc. Neuroscience Abstr.* 2001

125. J.E. Fox, **M. Bikson**, J.G.R. Jefferys. Minimum neuronal aggregate necessary for the generation of epileptiform discharges in the hippocampal slice exposed to low Ca ACSF. *Soc. Neuroscience Abstr.* 2001

126. M. Nakagawa, **M. Bikson**, D.M. Durand. A novel intact preparation for studying patterns of activity in the hippocampus. *Soc. Neuroscience Abstr.* 2000.

127. Durand, D.M. **M. Bikson**. Effects of High Frequency Stimulation on Cortical Neuronal Firing. *Biomedical Engineering Soc.* 2000

128. **M. Bikson**, J. Lian, D.M. Durand. Suppression of Epileptiform Activity by High Frequency Sinusoidal Fields. *World Congress on Medical Physics and Biomed. Eng. Conference Proceedings.* 2000

129. J. Lian, **M. Bikson**, J.W. Shuai, D.M. Durand. Propagation mechanism of epileptiform activity in the non synaptic model. *15th Annual Applied Neural Control Research Day*, Cleveland, 2000

130. **M. Bikson**, S.C. Baraban, D.M. Durand. Modulation of non-synaptic epileptiform activity by osmolarity. *Soc. Neuroscience Abstr.* 25:1869, 1999.
131. **M. Bikson**, J. Lian, D.M. Durand. Effect of high frequency stimulation on epileptiform activity in the hippocampus. *Soc. Neuroscience Abstr.* 25:1870, 1999.
132. P.J. Hahn, **M. Bikson**, D.M. Durand. A novel intact preparation for studying patterns of activity in the hippocampus. *Annals of Biomedical Engineering* 26: S-105, 1998
133. **M. Bikson**, R. Ghai, S.C. Baraban, D.M. Durand. Modulation of burst frequency, width, and amplitude in the zero-Ca model of epileptiform activity. *Soc. Neuroscience Abstr.* 24:1213, 1998.
134. R. Ghai, **M. Bikson**, and D.M. Durand. Electric field suppression of low Calcium epileptiform activity in the rat brain. *Soc. Neuroscience Abstr.* 24:1213, 1998.

Teaching / Instruction [limited selection]

City College of New York (Primary Instructor/Course Director)

*Indicates courses (co)developed and initially offered at CCNY by M. Bikson

BME I5100 Non-linear signal processing in biomedicine (2003). Grad.

BME 505 Biomedical Signal Processing and Instrumentation (2004). Grad/Undergrad.

BME 101 Introduction to Biomedical Engineering (2004, 2005, 2006, 2007, 2011, 2013)
Undergrad

*BME 310 Experimental Methods in BME 1 (2005, 2007, 2008, 2009) Undergrad.

*BME 450/460 Biomedical Senior Design II (2005, 2006, 2007, 2008, 2009, 2010, 2012, 2014, 2015, 2016, 2017, 2019, 2020) Undergrad

BME I000 Biomedical Engineering Seminar (2005, 2006, 2007) Seminar Director

*BME G3000/I3000 (BME 553) Introduction to Neural Engineering (2004, 2006, 2008, 2009, 2011, 2013, 2015, 2017, 2022, 2024) Grad

*BME 405 Biomedical Transducers and Instrumentation (2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023) Undergrad.

BME 205 Biomedical Circuits (2023)

City University of New York, Graduate Center (Course module)

Biophysics: Excitable membranes (2006) Grad

Diseases of the Nervous System: Epilepsy (2007, 2008, 2011, 2013) Grad

Masters in Translational Medicine (2020, 2021, 2022, 2024) Grad

Albert Einstein College of Medicine (Course module)

Neurological illnesses, module on Epilepsy, basic mechanisms (2006) Grad/Medical
Translational Neuroscience (2015) Grad

Columbia (Guest lecture)

Neuroscience Lecture Series, program in Neuroscience and Education at Columbia University's Teachers (2018, 2019)

Drexel University (Guest lecture)

Emerging topics on neuroengineering and neuroergonomics (2020)

Carnegie Mellon University (Guest Lecture)

Neuroengineering (Instructor Bin He). "Transcranial Electrical Stimulation" (2023)

Additional Innovative Instructional activities

Chair, CCNY BME undergraduate curriculum committee (2018-)

M-PI Bridges to the Baccalaureate Research Training Program at LaGuardia Community College, NIH funded (2020-2025)

Faculty mentor, G-RISE program is to focus biomedical research and professional skills development on UR PhD trainees at CCNY, NIH funded (2020-2025)

Development of new CCNY Neural Engineering course (2006)

Organization, course design, selection of equipment for CCNY BME 450/460 (2005)

Design of room architecture for CCNY BME 450/460 Biomedical Senior Design Lab, Room B41 (2004-2006)

Consolidation of modules and selection/purchase/installation of equipment for CCNY BME 310

Experimental Methods in CCNY BME (2003-2004).

Design of room architecture for CCNY BME 310 Instrumentation Teaching Lab (2003-2005).

Restructured CCNY BME Signal Processing, Instrumentation, Imaging, and Sensors curriculum (with Lucas Parra, 2003)

Presentation to CCNY Masters in Translational Medicine, graduate “Translational Neural Engineering” undergraduates” 2020-2023

Presentation to CCNY Engineering 101 undergraduates “Biomedical Engineering” 2018-2023

Presentation to CCNY COURT undergraduates “Engineering solutions to cancer.” 2005

Organized presentation to CCNY Eta Kappa Nu (2004) – “What do electrical engineers do in biomedical engineering.”

Advising and Mentoring

Doctoral Student Advisor*:

Datta A (2004-2011) ‘Model of non-invasive Controlled Transcranial Electrical Stimulation’

Radman T (2005-2010) ‘Effects of electric fields on spike timing’

Elwassif M (2006-2012) ‘Design of Controlled Transcranial Electrical Stimulation system’

Reato D (2009-2013) ‘Modulation of oscillations with tACS’

Rahman A (2011-2016) ‘Cellular mechanisms of tDCS’

Truong D (2013-2019) ‘Optimization of tDCS current flow’

Khadka N (2016-2020) ‘Influence of transdermal current flow in tDCS-induced cutaneous adverse events’

Adair D (2016-2021)

Esmaeilpour Z (2017-2022)

Unal G (2017-2022)

Zannou AL (2018-2022)

Walsh K (2022-2023)

Gebodh N (2019-)
 Koochesfahani (2021-)
 Fallah Rad M (2020-)

**2012 CCNY Mentoring Award in Architecture, Biomedical Education, Engineering and Science*

Master's Thesis/Project Advisor:

Joshua K (2007) 'Sensitivity of brain tissue to temperature'
 Maani S (2006-2007) 'Design of stimulation isolation unit'
 Elwassif M (2005-2006) 'Bio-heat transfer model of Deep Brain Stimulation'
 Shtaiwi F (2005-2006) 'Experimental measurement of DBS induced temperature changes in model system'
 Bansal V (2007-2009) 'Electrodes for HD-tDCS'
 Patel J (2007-2009) 'Hardware for non-invasive brain stimulation'
 Mathias H (2010, co-advisor visiting scholar, Germany) 'BONSAI interface for tDCS'
 Rahman A (2009-2011) 'Cellular effects of tDCS'
 Naguib T (2010-2012) 'Electroporation for cancer devices'
 Hahn C (2012, co-advisor visiting scholar, Germany) 'Limited Total Energy tDCS'
 Truong D (2011-2013) 'Role of skin far in tDCS current flow'
 Lietch L (2011-2013) 'Design, Product Development, and Risk Assessment of Tin (Sn) run electrodes as a substitute to Silver-Silver Chloride (Ag|AgCl) ring electrodes for High-Definition transcranial Direct Current Stimulation (HD-tDCS)'
 Guleyupoglu B (2011-) 'Electrodes for extended HD-tDCS'
 Minhas P (2013-) 'Validation of current flow modeling'
 Seibt O (2013-) 'Design of montages for depression control'
 Kronberg G (2013-) 'Modulation of plasticity with DCS'
 Nair A (2011-2013) 'Modeling of tDCS in cancer therapy'
 Thomas C (2013-) 'Overview of tDCS use and sessions'
 Jun J (2015-2017) 'Design development and performance study of a novel device to assist toddlers and children with visual impairments to learn walking'
 Bernstein H (2016-2018) Electrode and Headgear Design for Accurate TDCS
 Thahsin M (2022-2023) HD enhanced performance
 Donnery K (2023-) Ear device mode

Doctoral and Graduate Student Mentoring:

Su Y (2003) 'High-frequency electrical stimulation of high-K⁺ epileptiform activity'
 Wyatt K (2004) 'Model of neuronal aggregate formation'
 Rosenstein F (2005) 'Patch-clamp electrophysiological system configuration'
 Fan Z (2004-2005) 'Effects of electric fields on spike timing'
 Kong Q (2004-2012) 'Transient bio-heat transfer model of DBS'
 Thansin M (2022-2023) 'Electrode design'

Ph.D. Committee Member:

Hahn P (Case Western Reserve University) 2004 'Model of extracellular potassium diffusion'
 Ng Johnny (City University) 2006-2012
 Su Y (City University) 2006-2012
 Huang A (City University) 2009-2016
 Lafon B (City College) 2011-2016

Steinemann N (City College) 2012-2016
 Liu P (Hunter College) 2015-2017
 Eldib M (City College) -2016
 Sing T (City College) 2015-
 Alzahraa Amer (City College) 2016-
 Judy Alper (2016-)
 Marko Mikkonen, Aalto University (2019) "Individualized Computational Modeling of Transcranial Direct Current Stimulation
 Han Lu. (2020) "University of Strasbourg"
 Kivilcim Afacan-Seref (2020) CCNY "MECHANISMS OF VALUE-BIASED PRIORITIZATION IN FAST SENSORIMOTOR DECISION MAKING"
 Alzahraa Amern (2021) "Neuroplasticity of the Corticospinal System: Applications of Neuromodulation-Based Therapies"
 Maximilian Nentwich (2021) "NEURAL RESPONSES TO NATURALISTIC STIMULI"
 Lukas Hirsch (2023)
 Forouzan Farajani (2023)
 Gabriel Gauguin (2023)

M.S. Committee Member:

Guadron L (2014)
 Agyeman K (2016-2017)

Undergraduate Research Mentoring:

Chiu J (2007) 'Design of novel system for electro-chemotherapy of solid tumors'
 Bracco J (2007-2008) 'Long term effects of electric fields on hippocampal slices'
 Vaynshteyn J (2007-2009) 'Electric field modulation of motor cortex function'
 Miranda D (2004-2006) 'Role of GABAergic function in the high-K⁺ model of epilepsy'
 Stern A (2004-2005) 'Experimental measurement of DBS induced temperature changes in a bath'
 Pierre V (2006-2007) "Measurement of heating near DBS electrode"
 Hordof J (2006) "Effects of electric fields on brain slice function"
 Belisha I (2004-2007) 'Measurement of extracellular potassium transients during high-frequency electrical stimulation'
 An JH (2005-2010) 'Effects of glucose and glutamine concentration in the formulation of the artificial cerebrospinal fluid (ACSF)'
 Banerjee S (2005-2006) Web-site content maintenance
 Davis L (2006) 'Design of system for culture electrical impedance measurement'
 Macuff S (2010) 'Electronics for brain stimulation control'
 Arce D (2010-2013) 'Assembly methods for brain stimulation instrumentation'
 Febles N (2010-2011) 'Pre-treatment to increase tolerability during DCS'
 Xie B (2011) "Spheres simulation environment"
 Ho J (2008-2012) 'Electrodes for High-Definition tDCS'
 Refayat Bhuiyan MD (2011-2012) 'Segmentation for tDCS modeling'
 David A (2012-) 'Modeling of new tDCS montages'
 Alam M (2012-) 'Optimization of HD-tDCS protocols'
 Patel V (2013-) 'Next generation HD-tDCS electrode testing'
 Goh S (2012-) 'Design of HD-tDCS hydrogels'
 Fang Xiao (2013-2014) "Optimization of tDCS gels"
 Hochberg S (2013, JHU student) 'Formulation of hydrogels for tDCS'
 Mourdoukoutas A (2014-) 'New models for electrotherapy'
 Thomas C (2014-) "Meta-analysis of tDCS sessions"
 Chen A (2014-) "Epileptiform threshold for gamma oscillations under DCS"
 Khada N (2012-2014) "Method electrode impedance monitoring during multi-

channel tES”
Grossman P (2014-) “WiPOX stimulation”
Sobur C (2014-) “Neuromodulation trial for enhanced mood”
Boateng A (2014-) “Simulation system for DBS”
Zannou A (2014-) “Temperature changes under tDCS”
Griep D (2015-2016) – “Cranial nerve stimulation”
Jian J (2015-) “Concentric spheres models”
Paneri P (2013-) “Toolbox for tDCS”
Press KP (2016) “Modeling solutions for tDCS”
Saad RG (2016-) “Increased tolerability electrode”
Saleh Z (2015-2016) “Biomedical Instrumentation.”
Aboseria M (2014-2015) “Advanced designed for tES”
Postolache T (2017) “The toddler cane”
Islam T (2017) “Data management.”
Dressler L (2021) “SCS heating”
Poon C (2022) “ECT electrode impedance”
Canela C (2021) “ECT physics”
Nasimova M (2023) “Thermo-mechanical bed modeling”
Lily H (2022-2023) “Wearable stimulator”
Arghu K (2022-2023) “Wearable stimulator”
Jacome K (2022-2023) “Wearable stimulator”
Bhaskar V (2022-2023) “ESAPS”

Undergraduate Advising

BME Undergraduate Faculty Advisor: ~14 BME students/ year

Undergraduate Senior Design Supervision

2005-2006 3 student teams (with Luis Cardoso)
2006-2007 2 student teams (with Luis Cardoso)
2007-2008 5 student teams (with Luis Cardoso)
Fall 2013 6 student teams
2013-2014 40 students (with Sihong Wang)
2015-2016 60 students (with Maribel Vazquez)
2016-2017 55 students (with 2 other faculty)
2019-2020 45 students (with Alessandra Carriero)
2020-2021 50 students (With Sihon Wang)